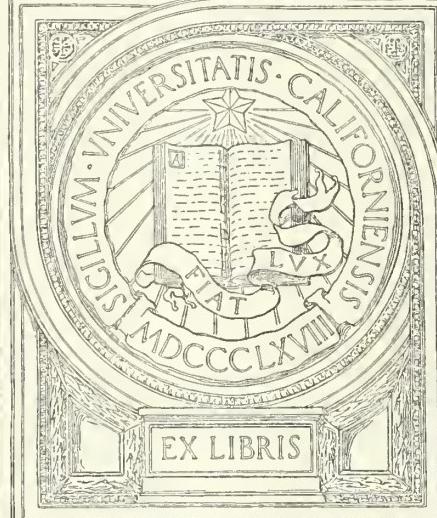




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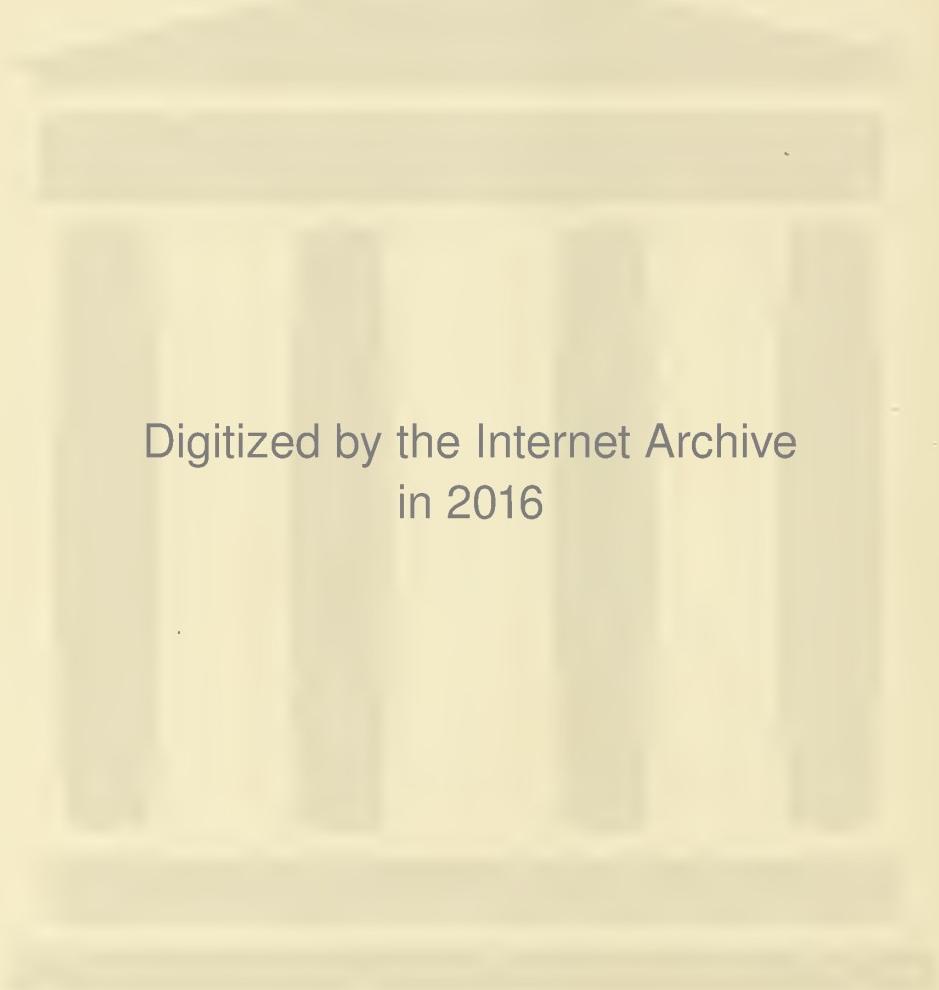


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# MINNESOTA MEDICINE

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J. R. BRUCE



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## PRE-OPERATIVE AND POSTOPERATIVE MANAGEMENT OF THE POOR RISK INFANT OR CHILD

ERLING S. PLATOU, M.D.

Minneapolis, Minnesota

PROPER management of the "poor risk" surgical patient challenges the profound judgment of men in almost every field of medical practice. Although the problems often differ in individual cases, they are, as has previously been pointed out, especially at variance in the extreme age levels. Compared to the adult, the surgical patient in early life has additional hazards due to the factors of immaturity, growth and development.

His immaturity in the first few months and years of life is characterized by unusually active physiologic processes, rapid metabolism, and relative instability with respect to water, acid-base, and nitrogen equilibrium. He is less capable of compensating for blood loss as well as to any tax on his heat-regulatory mechanism. Compared to the adult, his "margin of safety" is therefore appreciably reduced.<sup>2,5</sup>

The principal causes of a "poor risk" status in infancy and early childhood can be briefly stated as follows:

1. Developmental (Immaturity, congenital anomalies)
2. Nutritional (Hypoproteinemia and starvation)
  - Water balance (dehydration or edema)
  - Electrolyte balance (acidosis, alkalosis)
  - Endocrine balance (thyroid, diabetes)
3. Metabolic
  - Deficiency (Vitamins, minerals, tissue)
  - Infections (Active, anticipated contagion)
  - Traumatic (Injuries, burns)
  - Allergic (Asthma, edema)
  - Mechanical (Foreign bodies, obstructions)
  - Psychic

Although the pathologic physiology of the "poor risk" infant or child varies minutely with the above outlined etiology, and more than one of these mechanisms may operate together, the resulting syndrome is frequently one of imbalance, especially involving protein, fluid, and electrolytes.

It is well known that chronic infections often cause a depletion of protein in the body. Whereas in normal protein metabolism a few grains of nitrogen are lost daily in the urine, in some chronic diseases the destruction of protein becomes excessive. In acute infections, protein levels may have a bearing on survival. The influence of chronic infection is similar even though the results are less dramatic. Moreover, a cycle is often initiated during chronic infections in which diminished protein intake, excessive loss of protein, hypoaminoacidemia, and negative nitrogen balance occur.<sup>6,13,14</sup>

Nutritional deficiencies may likewise cause a lack of protein in the form of albumen. Studies reveal clearly that reduced plasma protein is directly responsible for nutritional edema in children whether the primary cause of the hypoproteinemia is prematurity, inadequate feeding, celiac disease, or any process which interferes with normal fabrication of protein.<sup>11</sup> When plasma protein and volume are restored, edema promptly disappears. The relative frequency of this condition and its association with malnutrition have been especially emphasized by Dodd.<sup>4</sup> There is no

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doubt that nutritional hypoproteinemia at or slightly above the "edema level," is very common in delicate babies and children with deficiency diseases, and that a prompt restoration of normal levels may alter an apparently refractory clinical course. Infections in the very young are often accompanied or overshadowed by the effects of hypoproteinemia. Plasma can materially help to combat chronic infection and hypoproteinemia in two ways: (1) by its nonspecific efforts on metabolism; and (2) by conferring antibodies contained in adult plasma pools.

For the correction of hypoproteinemia or hypoalbuminemia, amino acids have been said to be effective. Experimental and clinical proof of their ability to restore plasma proteins and achieve positive nitrogen balance has been presented. Their principal indication intravenously is in nutritional deficiency although they have, like plasma, also been found effective in subacute conditions with loss of plasma into the peritoneum in peritonitis, and into the bowel wall in obstruction. Both have been employed in hepatic insufficiency and nephrosis.<sup>6,8,13</sup>

Disturbances of fluid equilibrium, especially dehydration in the sick child, are frequently of greater importance than the underlying disease itself. This is true because of the relatively greater susceptibility of children to the effects of changes in volume and character of body water.

The small child has a greater percentage of water in his body than the adult and a greater partition of this is extracellular (i.e., intravascular and interstitial), where it serves to maintain plasma volume. He, therefore, often loses proportionately greater amounts of fluid during dehydration than an adult. Prompt fluid replacement and maintenance are therefore more urgent in the sick child.<sup>1,3,7</sup> In the case of simple dehydration, normal saline and glucose or Hartman's solution may be employed. A dosage schedule for rehydration and normal intake is shown in Table I.

TABLE I. TREATMENT OF DEHYDRATION (SEVERE)

Normal Intake per 24 hours		Rehydration
Infancy—60 c.c. per lb.		
Pre-school—45 c.c. per lb.	+ {	{ 30 c.c. per lb.
School—30 c.c. per lb.		
Example: Baby 10 kilo or 22 lbs. $\times$ 90 = 1980 c.c. 1st 24 hours Thereafter 22 $\times$ 60 = 1320 c.c. per 24 hours (One-third by Intravenous Drip)		

If protracted vomiting has been a prominent symptom in a child, alkalosis is suggested by the occurrence of shallow respiration, hypertonicity,

lack of chloride excretion, and a high plasma bicarbonate level. The therapeutic need in this circumstance is saline solution, and calcium gluconate or chloride followed by plasma or blood intravenously as shown in Table II.

TABLE II. TREATMENT OF ALKALOSIS

(Vomiting of Pyloric Stenosis, Intestinal Obstruction, Fistula, and Alkali Administration)

SODIUM CALCIUM PLASMA	and CHLORIDE + or	CHLORIDE or GLU- CONATE BLOOD
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If diarrhea, with loss of basic intestinal secretions, has occurred, reduction in plasma bicarbonate may have reached an extreme. Hemocytocencentration and circulatory stagnation then cause impaired renal function. Exhaustion of carbohydrate reserve and anoxemia permit intermediate products of fat metabolism and acids to accumulate in the blood. The resulting acidosis, if unchecked, may then lead to an increase in capillary permeability and be manifested by stupor, hyperpnea and symptoms of shock. Such a seriously altered physiologic state can best be corrected by the intravenous administration of glucose and buffered sodium lactate or sodium bicarbonate, followed by a protein colloid such as plasma. Rehydration, antiketosis, restoration of carbohydrate reserve and plasma volume are thus brought about. The treatment of acidosis is outlined in Table III.

TABLE III. TREATMENT OF ACIDOSIS

(Diarrhea, Fistula, Diabetes, Nephritis, Severe Infections, Convulsions, Heart Disease)

I.V.	{ SODIUM LACTATE and SODIUM BICARBONATE
Sub. cut.	+ (HARTMAN'S SOL.) Lactate Ringer's + PLASMA or BLOOD

Restitution of plasma volume will tend to increase renal function. Fluids containing buffer substances may then be held in the blood stream so that the selective action of the kidneys may come into play and a sustained trend toward proper water and electrolyte balance can be achieved. Dosage of alkalis that can be used for this purpose is shown in Table IV.<sup>9,10</sup>

From a relatively simple beginning, any one or a combination of these altered physiologic conditions, accelerated by infection or other factors, may rapidly approach a critical state. Much of

TABLE IV. DOSAGE

Weight in pounds $\times$ (Normal — Actual $\text{CO}_2$ Combining Power)
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= CC Isotonic (6th Molar) Sodium Lactate  
(or 6th Molar Sodium Bicarbonate) 1.5%

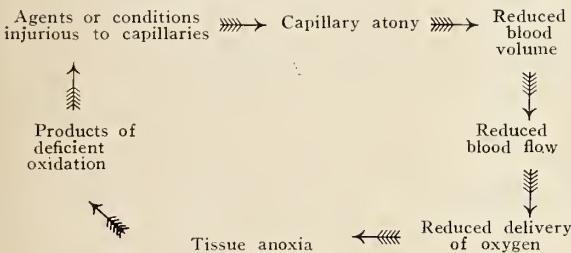
Example:

Baby 10 kilo or 22 lbs.  
 $\text{CO}_2$  Combining Power = 35 Vol. % } Diff. = 20  
 Normal Combining Power = 55 Vol. % }  
 $20 \times \text{wt. (22 lbs.)} = 440 \text{ c.c.}$

the mechanism of secondary or "medical" shock then develops. Confirmatory evidence of shock is found in abnormally high values of hemoglobin, red blood cells, hematocrit and specific gravity of the blood.

More dramatic and urgent than secondary or medical shock is the rapidly progressive primary shock precipitated especially by trauma, hemorrhage and burns. Moon and<sup>12</sup> and others have shown that plasma escapes through the capillary walls into the tissues in all types of shock and that diminution of blood volume then results. While the intimate nature of shock is not yet entirely clear, and some disagreement still prevails concerning the neurogenic, vasogenic, and hemo-  
togenic roles involved, the following schematic presentation by Moon serves to present many of the stages in its pathogenesis.

TABLE V (MOON)



Increased permeability of the capillaries and plasma loss are attended by reduced blood volume, capillary dilatation, hemocytocencentration, lowered venous pressure, reduced cardiac output and volume flow, anoxemia, and tissue anoxia. If these changes continue and are not recognized by clinical and laboratory means, a subsequent fall of arterial blood pressure occurs and an irreversible state may develop rapidly. Plasma can interrupt this process if given in time, by increasing the circulating blood volume and improving vascular tone. Fluid is thus drawn back from the tissues due to increased colloidal osmotic pressure, and the improved blood volume helps to re-

verse the cycle. Some observers prefer concentrated plasma for this purpose.

Investigators of the causes of disruption of abdominal wounds have pointed out that experimentally and clinically a state of hypoproteinemia may be one of the factors which retards normal healing.<sup>15</sup> Dogs, in which a state of protein deficiency was induced were subjected to abdominal laparotomy. In most of these, disruption of the wound or failure of the incision to heal was observed. Subsequent experiments demonstrated that normal healing of the wound occurred when the hypoproteinemia was controlled by intravenous infusion of plasma. Concentrated plasma is thought to have two advantages: it rapidly corrects the deficiency of blood proteins, and, being a hypertonic solution, increases the osmotic pressure of the blood and tends to overcome any tissue edema which may be present.

Rapid extensive hemorrhage may be a cause of "poor risk." Hemorrhage causes dilution of the blood, loss of extra-vascular fluid, dehydration, and distorted fluid equilibrium. Since the immediate need in severe hemorrhage is restoration of blood volume and pressure and because typing and cross-matching are unnecessary when pooled plasma is employed, it would seem more expedient and safer to use plasma for the hemorrhagic emergency and replace blood cells by transfusion subsequently, if the hemoglobin level is appreciably reduced.

Obviously, no comprehensive formulae can be evolved to determine the requirements of all factors in a mechanism so complex and precipitated by so many causes as the failing circulation of the sick child. Clinical judgment to determine the need for specific and group antibodies, for fluids, for electrolytes, and for protein sufficient to maintain an adequate circulating blood volume is all-important. Evaluation of hydration, determination of plasma protein, bicarbonate and chloride, the number of red cells, the hemoglobin, hematocrit, and specific gravity of the blood are invaluable adjuncts. Katherine Dodd<sup>4</sup> has stated the principle exceedingly well: "In a child taking inadequate food and not receiving transfusions, a gain in weight, accompanied by an increase in hemoglobin and a decrease in plasma protein, means that plasma fluid and protein are being lost from the blood stream."

The dosage of human plasma and serum must depend on the weight of the child and the serious-

ness of the condition for which it is to be employed. For the transfer of specific antibodies in prophylaxis and treatment of communicable disease, doses of 10 c.c. to 100 c.c. are usually given. In chronic infections and hypoproteinemic states, doses should be gauged to accomplish physiologic levels of plasma proteins. For the sake of illustration, a computation of approximate protein need in a 10 kilogram baby whose plasma protein level is 5.3 grams per 100 c.c. of blood is appended.

TABLE VI

Plasma protein (patient)	= 5.3 gm./100 c.c. blood
Plasma protein (normal)	= 6.7 gm./100 c.c. blood
Plasma protein deficit	= 1.5 gm./100 c.c. blood
Weight of patient	= 10 K
Blood volume (8%)	= 800 c.c.
Deficit 8 X 1.5	= 12.0 gm.
12.0 gm.	= 175 to 200 c.c. plasma (approx.)
Additional	{X Factor = Depleted reserve {X Factor = Maintenance

Time and space do not permit considering all pre- and postoperative management in detail. One should not fail, at least, to mention the use of high vitamin intake, specific drugs, oxygen, tubes for decompression, and careful judgment in the choice of anesthetic and time of operation.

A cannula in a vein for prompt use of plasma, especially during operations on the brain or thorax, may be life saving.

Finally, let me urge that careful mental preparation be employed, when possible, in every child who must come to surgery. Serious psychoneurosis, an all too common postoperative "poor risk" complication, may be avoided by this means.

### Bibliography

1. Butler, A. M.: Electrolyte and water balance. *New England J. Med.*, 220:827, 1939.
2. Coe, Herbert E.: Relation of growth and development to pediatric surgery. *Rocky Mountain M. J.*, 39:838, 1942.
3. Darrow, D. C., and Yennet, H.: Changes in distribution of body water accompanying increase and decrease in extracellular electrolytes. *J. Clin. Investigation*, 14:266, 1935.
4. Dodd, Katherine: Edema in infancy and childhood as expression of chronic dietary insufficiency. *J. Pediatrics*, 8:442, 1936.
5. Duckett, J. W.: Pre-operative and postoperative pediatric care. *Texas State J. Med.*, 38:528, 1942.
6. Elman, Robt., and Lischer, Carl: Occurrence and correction of hypoproteinemia in surgical patients. *Surg., Gynec. & Obst.*, 76:503-514, (June) 1943.
7. Gamble, J. L.: Chemical Anatomy, Physiology and Pathology of Extracellular Fluid. A Lecture Syllabus. Harvard Medical School, 1939.
8. Gardner, C. E., and Trent, J. C.: Intravenous amino acid administration in surgical patients using an enzymatic casein digest. *Surg., Gynec., & Obst.*, 75:657, 1942.
9. Hartman, Alexis: Acidosis, alkalois and ketosis. Brenne- man. Practice of Pediatrics, 1:24.
10. Holt, L. E., and McIntosh, R.: Diseases of Infancy and Children, 11th edition. New York, Appleton Century, 1940.
11. McQuarrie, I.: Impaired ability to fabricate serum proteins, the chief cause of edema in chronic constrictive pericarditis. *Journal Lancet*, 5:199, 1942.
12. Moon, V. H.: Shock and Related Capillary phenomena. New York: Oxford Press, 1938.
13. Platou, E. S.: Human serum and plasma in diseases of children. *New Orleans M. & S. J.*, 95:547, (June) 1943.
14. Sako, W.: Resistance to infection as affected by diet. *J. Pediatrics*, 20:425, 1942.
15. Thompson, W. D., Ravdin, I. S., and Frank, L. L.: Effects of hypoproteinemia on wound disruption. *Arch. Surg.*, 35: 500, 1938.

## PRE-OPERATIVE AND POSTOPERATIVE CARE OF AGED SURGICAL PATIENTS

OLOF I. SOHLBERG, M.D., F.A.C.S.

Saint Paul, Minnesota

IT IS true that surgery on the aged is more serious than on young people. On the average, it is eight times as dangerous to operate upon a person over fifty as upon one younger.<sup>6</sup> However, people do not age chronologically nor do their tissues age equally.<sup>4</sup> Many older people are greatly handicapped by bad habits of eating and of thinking.<sup>5,11,12,13</sup> I will not go into the physiology of aging. Others have done this far better than I can, and it is well known to you.<sup>4</sup>

### Pre-operative Care

A most careful history and evaluation of the physical condition of the patient is even of more

importance in older people than in younger. A detailed personal history, supplemented by a history from relatives, is very important. This often takes infinite patience and an astute sifting of the chaff from the wheat. However, it will pay richly in evaluating the patient and gaining his confidence. A few questions about his forebearers will often reveal the kind of stuff he is made of and greatly aid in prognosis and preparation.

Many old people will refuse operation on the plea of age, uselessness to others and so on. If these people can be assured that help is not only possible, but probable, and that their recovery is desired by everybody, a happier frame of mind is induced. They must be led, not driven. A hope-

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ful, trusting patient, who wants to get well has been more than half prepared. A properly-trained nurse, accustomed to handling old people, is invaluable.

Remember that older people have developed a "habit of living," a resistance to infection and an ability to stand pain or an indifference to it<sup>14</sup> that stands them in good stead. On the other hand they often follow food faddists and develop habits of diet that are bad. A common result is a low protein intake, with its anemia and debility-producing results.<sup>15</sup> Low vitamin intake is common<sup>8,11</sup> with resultant poor healing and poorer prognosis. It is often amazing what some of the commercial concentrates of *B* and *C* will do to induce a sense of well-being. You all know the importance of vitamin C in healing of tissue.<sup>11</sup>

The less departure from an older person's routine the better. The older one gets the more he loves routine and established things. The feeling of insecurity in children is only matched by that in the aged, and requires a corresponding assurance of belonging, of being wanted, and of being useful.

Most deaths in old people are primarily due to circulatory failure. A test of the circulation and cardiac reserve should be made. This is difficult but is of the greatest importance. The history of the patient's parents and relatives, and of his own physical activities and his response to them, as well, are of great value. Pulse, blood pressure, a chest plate and an electrocardiogram will give much additional valuable information.

As to the kidneys, the simple tests for sugar, albumen and the sediments, as well as the ability to concentrate and dilute the urine will usually suffice for that department. The lungs are hard to evaluate. Many of the secondary effects of emphysema are often present due to loss of elasticity<sup>7</sup> of the lungs even though a true emphysema is not present. Infections, even pneumonia, may be present with but few objective findings.

Oral hygiene as a prophylactic of suppurative parotitis is worth attending to.<sup>9</sup> The nutritional deficiencies, anemia, low serum protein and so on, indicated previously, must be corrected.

Thewlis in his book on "Care of the Aged" recommends digitalis pre-operatively in almost all serious operations on the aged.<sup>11</sup> Many others do not agree<sup>8,9</sup> and I am inclined to concur. But I do believe that Borg is right in his use of quinidine<sup>3</sup> and I think I have saved some lives thereby,

as a frequent cause of cardiac failure is auricular fibrillation.

So you see, although definite principles must be born in mind, extreme individualization in preparing these aging people for surgery is important.

### Postoperative Care

After surgery on aged or aging people the utmost care is required. Here, too, an experienced, tactful nurse is worth everything and may mean the difference between life and death. For years I have been advocating early activity postoperatively. Nowhere is it more important than here. Old people fail rapidly in bed. These people must if possible get out of bed the day of the operation. That this is not dangerous to the wound I can assure you from personal experience and from that of many others.<sup>8,9,10</sup> This also has a most wholesome psychological effect and I believe definitely reduces the chances of embolism.

Transfusions preferably, or if blood is not available, the use of plasma intravenously, help marvelously. Fluids must be kept up and the high carbohydrate content of the liver provided for pre-operatively must be maintained. A good rule, as far as fluid intake is concerned, is to not allow the urinary output to fall below 1000 c.c. per twenty-four hours. Early feeding decreases gas pains by stimulating peristalsis<sup>8,10</sup>, which lessens danger of ileus and mesenteric thrombosis. The chewing decreases chances of parotiditis. The bladder should be watched. Due to decreased sensitivity, aged people often will permit the bladder to get tremendously distended without knowing it. The telescopic memory of old people makes their own perceptions not reliable. A good rule to follow is to have the patient void or be catheterized every eight hours. Over-distention of the bladder does far more harm than catheterization.<sup>16</sup>

Old people have an inactive heat regulatory mechanism. To avoid a burden on their circulatory systems, see that their extremities are warm. This also avoids fatigue and delayed shock. Massage of the extremities and mild daily exercise are aids in maintaining peripheral circulation and a sense of well-being.

For the relief of pain nothing is better than opiates but on account of their depressing nature must be given with care. Accompanied by strychnine the danger is a great deal less. Restlessness is best controlled by oxygen. Oxygen is in fact

the most valuable aid to the circulation and I give it almost routinely in old people postoperatively as a prophylactic. Alcohol in small doses has a good euphoric effect and is a fine sedative. Barbiturates are often dangerous.<sup>1</sup> They make co-operation difficult and are often alarmingly depressing. Try to keep the patient in his own familiar routine as much as possible. Avoid unnecessary irritants. Treat him as an important, necessary member of society, who is going through an ordeal to again become useful. The care of the aged surgically is trying, calls for much attention to detail, co-operation of everybody—doctor, nurse, relatives and hospital authorities. But I think nothing will give one more real satisfaction than the triumphant recovery of a bad-risk, aging patient.

## References

- Baird, Joe W.: Geriatrics and anaesthesia. *Anaesthesiology*, 4:17, (Jan.) 1943.
- Bancroft, Frederick W.: Surgery in the aged. *New York State J. Med.*, 43:377, (Jan.) 1943.
- Borg, Joseph F.: Quinidine. *Tr. Am. Therap. Soc.*, 36:88-91, 1936.
- Carlson, A. J.: The physiology of aging. *Northwest Med.*, 42:6-13, 46-48, 1943.
- Duchier, Dorothy: *J. Am. Dietet. Assn.*, 18:508-511, (Aug.) 1942.
- Miller, Albert G.: The influence of age in surgical prognoses. *Am. J. Surg.*, 33:112, (Oct.) 1919.
- Mueller-Deham, Albert: Diagnosis in old age: a statistical study. *M. Times*, 7:297, (Oct.) 1943.
- Nast, W. H.: Surgery in the aged. *Rocky Mountain M. J.*, 35:461, (June) 1938.
- Rankin, Fred W., and Johnston, Coleman: Major operations in elderly patients. *Surgery*, 5:763, (May) 1939.
- Sohiberg, Olof I.: Effect of early feeding postoperatively. *Minnesota Med.*, 18:382-384, (June) 1935.
- Thewlis, N. W.: *The Care of the Aged*. 3rd ed., St. Louis: C. V. Mosby Co., 1941.
- Tuohy, E. L.: A proper and adequate protein diet for elderly people. *Minnesota Med.*, 23:313, (May) 1940.
- Tuohy, E. L.: Nutritional management of the aged. *Minnesota Med.*, 26:881, (Oct.) 1943.
- Tuohy, E. L.: An adequate dietary in later life. *Wisconsin M. J.*, 39:353, (May) 1940.
- Tuohy, E. L.: Geriatrics in relation to an adequate energy-producing and protective diet. *J.A.M.A.*, 114:223-227, (Jan. 20) 1940.
- Young, Hugh H.: Personal communication.

## PRE-OPERATIVE AND POSTOPERATIVE CARE OF THE BAD RISK PATIENT

RAYMOND W. MCNEALY, M.D., F.A.C.S.

Associate Professor of Surgery, Northwestern Medical School  
Chicago, Illinois

A PATIENT may be a bad surgical risk and the cause of the hazard easily recognized. In other poor risks only careful routine screening will reveal the unsuspected danger. Many of these patients have margins of safety so narrow that they must have the benefits of well-planned pre- and postoperative care if they are to survive.

In spite of the fact that most of us subscribe to the popular belief that the biochemical and physiological aspects are all-important, we must not lose sight of the old hazards which rise repeatedly to harass the surgeon and destroy the patient. The ultimate of perfection in surgical technique has not been reached; nevertheless, it seems safe to say that more may be expected from constructive pre-operative and postoperative therapy than from improved surgical design. The present trend centers attention on methods of improving and restoring the resources of the body.

Failure to use adequate pre-operative and post-operative care can never be excused because the

surgery is urgent or because the laboratory facilities are beyond the patient's means. It is well to note the need for a cost analysis of the laboratory facilities in many of our hospitals. Very often the charges for blood, fluid, and tissue studies add a tremendous burden to a patient with a limited income.

The pre-operative and postoperative routine of a surgical service should be formulated in writing, carefully studied by all members of the service, constantly reviewed, and frequently re-edited. Familiarity with these routines facilitates their use at the earliest period in the patient's hospital stay.

No attempt will be made to analyze all the attributes of the bad-risk patient or to present them in the order of their frequency or importance. I shall confine myself to a few subjects which have occupied my attention recently and which I consider worthy of emphasis at this time.

### Anesthesia and Oxygen Therapy

The question of the choice and method of administration of anesthesia is omitted only be-

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cause it is actually a part of the operative procedure.

I have been impressed by the improvement in the immediate postoperative care which has evolved in our hospital under a well-supervised anesthesia service. There is little doubt but that the first hour or two following operation is a very critical time. Unless there is close co-operation between the anesthetist and the resident and nursing staffs, there will be a period where the responsibility is divided and the patient may suffer.

In poor-risk patients the use of oxygen by mask, tent, or nasal catheter may contribute greatly to the patient's well-being. During this early period aspiration and atelectasis are likely to have their inception, and usually these may be avoided by improving the immediate post-operative care. The salubrious effect produced by timely oxygen administration is many times very startling. This is especially true in thyroid disease, particularly in those hyperthyroid states in middle-aged patients whose cardiac reserves are exhausted and whose livers have suffered depletion from prolonged metabolic dysfunction. The use of oxygen is equally impressive in certain patients who are recovering from operations on the biliary tract. Many of these patients have inefficient livers because of repeated upsets of liver function and chronic recurrent diseases of the biliary tract. In these cases anoxemia is most undesirable. The efficiency of the liver may be greatly enhanced by the early administration of oxygen together with intravenous glucose therapy. The addition of adequate amounts of vitamin K may be helpful and even life-saving if jaundice has intervened.

#### **Liver Efficiency and Hypoproteinemia**

It is needless to emphasize that every effort should be made to fortify the liver pre-operatively by a well-planned dietary regime. The value of a high-carbohydrate, high-vitamin intake is of first importance. A selective protein intake should be given to insure against hypoproteinemia. In the presence of a properly functioning liver, oxygen therapy has a salutary influence on the fluid balance of the body. Oxygen plus an efficient liver will induce proper oxidation of the carbohydrates present, forming carbon dioxide and water. The carbon dioxide acts as a stimulant to the respiratory center, and is

eliminated through the lungs. The water is excreted through the kidneys, taking with it various metabolites. The existence of anoxicemic states may lead to hyperglycemia and glycosuria, and the liver may suffer a glycogen deficiency.

Any patient who has a well-marked anemia should be regarded as a questionable risk for surgery. We are thoroughly familiar with the diminished oxygen-carrying power of hypochromic and cytopenic anemias, but we are probably not as conscious of hypoproteinemias and tissue protein deficiencies as their importance would warrant. The term protein deficiency is more appropriate than hypoproteinemia because the latter is a description of the circulating proteins which merely mirror the total protein depots of the body. Only when there is sufficient depletion of tissue proteins do the circulating proteins manifest themselves as a hypoproteinemia. The ratio of tissue to circulating proteins is considered to be thirty to one; therefore, any decrease in plasma protein implies a depletion of tissue protein many times greater. That is why a fall in protein in a surgical patient having an initial hypoproteinemia is much more significant than a similar fall in a patient with an initial normal level. For the same reason treatment of the hypoproteinemia as such with blood and plasma proteins produces a slow response in plasma protein levels. The tissue protein deficiency must be satisfied first before the plasma protein levels offer an accurate index.

Recent studies of this problem in the Hoekton Institute of Cook County Hospital have shown the value of establishing normal levels in patients who are being prepared for major operations. Hypoproteinemia is common in patients with peptic ulcers (especially bleeding peptic ulcers), carcinoma of the gastro-intestinal tract, bowel obstructions, lesions of the biliary tract, gastro-intestinal fistulae, and burns. Surgery produces an average loss of 5 per cent of total plasma protein in *normal* patients, an average 12 per cent drop in *hyperproteinemic* patients, and a 5 per cent increase in *hypoproteinemic* patients. This increase in hypoproteinemic patients is probably due to the energetic use of blood transfusions. Carcinoma of the colon, bowel obstruction, and generalized peritonitis produce the largest decrease in plasma proteins from 18 to 25 per cent. We accept arbitrarily 6.00 grams per cent as the upper limit of hypoproteinemia. Complica-

tions of hypoproteinemia, other than death, are impaired wound healing and generalized edema (including edema of the tissues, brain, and gastro-intestinal tract), leading to poorly functioning enterostomies, anorexia, restlessness and irritability, and asthenia.

Whole blood produces a greater rise in protein levels than does plasma. This may be attributed to hemoglobin as a source of protein. In a patient with a hypoproteinemia, depletion of the tissue protein depots must be assumed, because it takes at least 2000 c.c. or more of whole blood to produce any consistent elevation in total plasma protein levels. However, there is a striking improvement in the plasma protein levels when amino acids, combined with whole blood, are given parenterally. Here the amino acids are probably utilized for the tissue proteins, and the whole proteins—blood or plasma—add essentially to the circulating proteins. These findings suggest that a very determined effort should be made to correct protein deficiencies in all patients who undergo major surgery. The correct use of whole blood, plasma, amino acids, dextrose solutions, and saline solutions must depend on frequent observations of the patient's total plasma protein levels, hematocrit readings, and hemoglobin estimations. Again, I should like to stress the point that in patients with protein deficiencies transfusions of less than 2,000 c.c. rarely bring the total plasma protein levels up to the minimal requirements.

### Vitamin Therapy

We have mentioned wound healing and the reparative processes which accompany gastric and intestinal anastomoses. These processes are a function of the tissue protein depots of the body as reflected by the plasma protein levels of the blood; however, they also depend upon the efficient levels of others factors. It is of little avail to saturate a surgical patient with protein if the lack of these other factors is not adjusted. It has been demonstrated repeatedly that low vitamin C levels manifest themselves histologically by the lack of collagen, which is a basic substance of tissue repair. With this defect in collagen production the architecture of the healing wound is disturbed. The work of Allen Hunt demonstrates that vitamin C deficiency has a widespread effect on tissue healing. He states:

"The proliferation of fibroblasts, at first apparently normal in rate, continues so long as the scar production is abnormally retarded. The cells remain immature. Blood vessels do not readily penetrate this ill-formed granulation tissue. Hematomata are not organized or absorbed, and the scar becomes split up by further extravasations of blood-stained edema fluid. The phagocytosis of damaged tissues is delayed, and the supporting structures bordering upon the incision are not satisfactorily incorporated in the newly-formed scar. These secondary effects may well be due to a disturbance of the blood supply or vascular permeability, but this is itself directly or indirectly due to the deficiency of vitamin C."<sup>1</sup>

Observation of patients who came to our service with histories of restricted diets over long periods has focused our attention on the importance of the pre-operative administration of vitamin C. These diets were notably deficient in vitamins. On carefully checking these patients before operation, we found that a great many had vitamin C levels approaching subclinical scurvy. In 1938 we began to study the relationship of the vitamin C levels to wound repair.<sup>2</sup> We found that the administration of vitamin C led to a much smoother convalescence, and much firmer wound repair, and fewer wound disruptions and serum extravasations. It has been our practice to determine vitamin C levels as soon as the patient is admitted. When subnormal levels are found, we begin intensive administration of large doses of vitamin C intravenously. A thousand milligrams of Vitamin C\* are given daily, preferably in divided doses in the pre-operative intravenous glucose or salt solutions. These are supplied by the slow drip method. This type of management is predicated on the fact that there is a very low renal threshold for vitamin C. Its rapid elimination from the blood may be minimized and the effective rate of tissue absorption increased by prolonging the period of administration. If a single dose of 1,000 milligrams of ascorbic acid be given intravenously, the blood will show a five milligrams per cent level during the first hour; but this will fall within five hours almost to the pre-injection level. The ability of the tissues to absorb and store vitamin C is limited as to rate, and it is suggested by students of this problem that tissue saturation, even with very

\*Vitamin C (Cevalin, Eli Lilly & Co.), 5 c.c. contains ascorbic acid 500 mg. representing 10,000 U.S.P. or International units of Vitamin C. Injected subcutaneously, intramuscularly, or intravenously.

large doses, cannot be attained before five to seven days. This is not to be construed as a reservation that patients will invariably need five days pre-operative preparation, because the most acute need for collagen efficiency occurs when the sutures which have been inserted begin to cut through and lose their supportive strength. This period is probably somewhere between the third and fifth postoperative days. Thus in a patient with a very low vitamin C level, tissue saturation could be attained at the time of greatest need if the patient were placed on a high vitamin C regime immediately on the decision to operate or upon his admission to the hospital.

### Vitamin K

Previously, mention was made of vitamin K therapy. Much has been contributed by experimental and clinical work with vitamin K substances, whose essential value lies in their ability to raise the prothrombin level of the blood. The oral administration of vitamin K substances presented the problem of poor absorption in patients whose intestinal bile was greatly diminished or absent as a result of obstruction or diversion. Synthetic vitamin K substances were developed which made parenteral administration the method of choice. The remaining obstacle to the proper utilization of vitamin K is an inefficient liver. The liver must synthesize the vitamin K substances into prothrombin and an efficient liver is essential to this conversion. Serious liver impairment would handicap vitamin K therapy when it might be most needed. Recent contributions to this subject encourage us in the belief that prothrombin in a stable form may be isolated and administered as such, thereby bridging the gap of the inefficient liver. The direct introduction of prothrombin by liberal, fresh, whole blood transfusions has been our only solution to date. It must be kept in mind, however, that the prothrombin content of stored blood or blood exposed to light may quickly be dissipated.

### Old Age

The ability of the aged to undergo major surgery is frequently underestimated. Old age has no constant for mental or physical stability, nor is it a reliable measure of operability. Because tissue vitality is reduced by a varying de-

gree of cellular atrophy, we are led quite naturally to associate old age with bad risk; but many reservations must be made. Each year finds more and more patients in the sixth, seventh, and eighth decades of life requiring surgical operations. The risk may be estimated only by an individual study of each patient. The most common problems in the old age group are: (1) avitaminosis due to enforced or selective habits of diet and to poor absorption; (2) cardio-vascular-renal diseases associated with arteriosclerosis, hypertension and myocardial impairment; (3) acute upper respiratory infections; and (4) chronic respiratory diseases. The latter are generally divided into (a) chronic emphysematous anoxemic type, (b) accumulative and productive varieties of bronchiectasis and bronchitis.

Diminished healing capacity is not outstanding in elderly patients, but is much influenced by the circulatory efficiency and vitamin levels. The same measures which help alleviate the tissue deficiencies in the aged also help prevent the postoperative complications peculiar to old age, namely, pulmonary infections or edema, thromboses, and renal failure. Vitamin B-Complex,\* Vitamin C, and Vitamin A (100,000 units daily) are given in large doses before and after operation. Tissue anoxia, which is a concomitant of emphysematous lungs and impaired circulation, is relieved by the maintenance of bodily movements postoperatively and encouraging deep breathing exercises and oxygen administration during the early postoperative period. The respiratory and circulatory rate may be increased valuably by getting these patients up early after operation. Furthermore, a careful check on the water balance will help prevent stasis. The problem of blood protein and hemoglobin levels has already been discussed.

For the most part the factors which make a poor risk patient in young and middle-aged groups work in the aged group also and if surgical management is modified according to their special requirements, fewer old-age patients need be denied the extended life and increase comfort which surgery may offer.

### Chemotherapy

I have purposely avoided a discussion of chemotherapy in the pre-operative and postoperative

\*Vitamin B-Complex (Solu-B, Upjohn) 5 c.c., or Betalin Complex (Eli Lilly) 4 to 6 c.c. These amounts contain concentrated doses of the B-Complex.

management of the bad risk patient. At this time, the enormous strides that are being made in sulfonamide and penicillin therapy have such profound implications that premature evaluations might very easily become injudicious in the light of future work. However, there is one reservation which I feel is not too pedantic. The tendency to depend too much on the efficacy of the sulfonamides and penicillin may lead to unwarranted and indiscriminate disregard of many thoroughly-established surgical principles. Such omissions will not be corrected even by the most careful administration of these newer chemo-

therapies. Let us hope that this unbounded enthusiasm for these chemicals does not produce a decline in surgical principles and techniques. If these biostatic chemicals fulfill even a small part of the prophecies being made by many otherwise conservative men of science, a surgical renaissance is in the making; and the problem of pre-operative and postoperative management of the bad risk patient should shrink in magnitude.

### References

1. Hunt, Alan, H.: The role of vitamin C in wound healing. *Brit. J. Surg.*, 28:458, 1941.
2. McNealy, R. W., Gubler, J., and Tuft, E.: Dietary deficiencies in surgical patients. *Surgery*, 6:48, (July) 1939.

## MALIGNANT GROWTHS OF THE MASTOID PROCESS AND MIDDLE EAR

FREDERICK A. FIGI, M.D., and BERT E. HEMPSTEAD, M.D.  
Rochester, Minnesota

**I**NVOLVEMENT of the middle ear and the mastoid process by a malignant neoplastic process has generally been considered almost a pathologic curiosity. Moreover, the condition has been quite universally supposed to respond unfavorably to therapeutic measures. Actually, this lesion occurs less rarely than the medical literature would lead one to believe and, if the condition is recognized reasonably early and is dealt with adequately, the prognosis is as satisfactory as that generally offered by malignant tumors of the nasal accessory sinuses.

### Literature

The literature on malignant tumors of the middle ear and the mastoid process is not extensive. The largest series of cases reported (13) is that of Thorell, presented with a consideration of the treatment of this condition at the Radium-hemmet. Outstanding articles on this subject in the American literature have been written by Furstenberg, Schall and Spencer. In addition, reports of cases have been presented by Robinson, Bowman, Smith, Newhart, Stokes and others.

### Incidence

During the twenty-year period ending Decem-

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From the Section on Laryngology, Oral and Plastic Surgery (Figl) and the Section in Otolaryngology and Rhinology (Hempstead), Mayo Clinic, Rochester, Minnesota.

ber 31, 1941, there were seen at the Mayo Clinic forty-eight patients who had malignant tumors involving the middle ear and the mastoid process. More than 500 additional patients observed during this period had malignant lesions involving only the pinna or the external auditory canal.

### Site of Origin

The middle ear and the mastoid process may be involved by a malignant neoplasm arising primarily in these situations or they may be invaded secondarily by a lesion that has originated in the pinna or in the structures adjacent to it. For convenience we have designated the former as intrinsic growths. Tumors having their origin in the pinna, in the skin of the surrounding region, in the parotid gland, in the nasopharynx or in other structures outside of the ear are referred to as extrinsic. In our experience the intrinsic growths outnumber the extrinsic, and this predominance holds generally in cases of this type reported by other observers. In twenty-five of the thirty-eight cases observed at the Mayo Clinic, the tumors were considered intrinsic. In the remaining thirteen cases, the lesions were extrinsic.

### Symptoms

The clinical course of malignant disease of the middle ear and the mastoid process varies greatly. Symptoms may be present for only a few weeks or months or they may exist for some years.

The symptoms most commonly complained of are pain, discharge from the ear, the presence of an ulcer in or about the ear and decreased hearing on the affected side. Bleeding from the ear, facial paralysis, vertigo, mastoid tenderness, tinnitus and the presence of a tumor are encountered less frequently. The complaint most commonly made by patients in this series of cases was of pain in the ear. A few patients, however, experienced no pain whatever. Pain, when present, was usually of a steady aching character but occasionally became lancinating and in some cases was more of a sense of pressure or throbbing than intense distress.

Next to pain in or about the ear, the most common symptom was a discharge from the ear. At times it had had its inception in an acute otitis media in childhood and thus had preceded other symptoms by years. Often there was nothing unusual about the character or the amount of the discharge but at times its very foul odor, watery consistency and the fact that it was blood tinged had been noted by the patient. A fifth of the patients had experienced spontaneous bleeding from the auditory canal.

In the thirteen cases of extrinsic tumor, the presence of an ulcer or a tumor in the external canal or about the pinna or the mastoid region was the most frequent complaint.

Otorrhea of long duration is generally considered an important etiologic factor in the development of such neoplasms, but whether it has any direct bearing in this regard is debatable.

In this series of thirty-eight cases, there had been long-continued aural discharge in only eleven.

### Clinical Findings

The clinical picture in cases of malignant tumors of the middle ear and the mastoid varies greatly depending on whether the neoplasm has originated within these structures or has originated externally and invaded them secondarily. Tumors developing intrinsically may reveal little evidence of their presence until well advanced; in most instances, the subjective symptoms are out of all proportion to the physical findings. In an unusual case of this type, in which the patient was a woman, forty-three years of age, the only objective sign demonstrable was the presence of tenderness in the tissues over the mastoid region, yet exploration revealed an extensive, highly

malignant, squamous cell epithelioma of the mastoid process and considerable destruction of bone. More commonly, the external auditory canal is filled with polyps which frequently recur and may be fairly fibrous. A highly vascular, readily bleeding mass or a granular growth may be present in the canal, or the canal may be greatly narrowed by diffuse thickening or infiltration of its walls.

In cases of extrinsic malignant lesions with invasion of the tympanum and the mastoid process, the clinical findings are likely to be pronounced. Unless treatment has been carried out recently, in a high percentage of cases the nature of the lesion will be obvious to a physician who has had appreciable experience with malignant neoplasms. A clinical diagnosis of epithelioma was made in a large proportion of the cases of extrinsic lesions in this series and subsequent microscopic studies corroborated this diagnosis. Malignant ulceration of varying extent was present in most of the cases of epithelioma, and in a number of cases there was fixation of the ulcer over the mastoid region. Direct extension of the neoplasm inward along the external auditory canal was encountered usually although at times the ulceration overlying the mastoid process was penetrating into the bony structures beneath.

### Treatment

In the past the treatment of malignant tumors of the middle ear and the mastoid process has been discouraging. Such cases are encountered so seldom that it has been difficult to develop an effective method of therapy based on accumulated experience. Treatment has consisted chiefly of surgical removal of the tumor and irradiation, either alone or combined, and in only exceptional cases has this resulted in more than temporary palliation.

Originality is not claimed for the method of treatment that we have employed in cases of this type. The procedure has evolved rather largely from that used in dealing with malignant neoplasms of the nasal accessory sinuses and larynx and likewise has improved considerably since the development of electrosurgical methods. In the cases which were observed early in our experience, treatment consisted almost exclusively of radium packs and direct application of radium tubes with or without excision. This method of treatment has been supplanted by the more ra-

## MALIGNANT GROWTHS OF THE MIDDLE EAR—FIGI AND HEMPSTEAD

TABLE I. SUMMARY OF RESULTS IN THIRTY-EIGHT CASES OF MALIGNANT TUMORS OF THE MIDDLE EAR AND THE MASTOID.

Date of registration	Age, years, and sex	Site of origin of tumor	Pathologic Condition	Treatment	Freedom from recurrence, years	Results
Oct., 1919	54 M	Extrinsic	Basal cell and squamous cell epithelioma, grade 1	Repeated cautery excision and irradiation	Periods, 3½ to 5½	Died of recurrence 15 years after original treatment at clinic
April, 1921	28 F	Intrinsic	Fibrosarcoma, grade 4	Mastoidectomy and irradiation; plastic correction of facial paralysis	8	Living and well more than 8 years
Sept., 1922	71 M	Extrinsic	Basal cell epithelioma	Irradiation		Palliation; died of epithelioma May, 1924
Jan., 1923	57 M	Extrinsic	Squamous cell epithelioma, grade 3	Irradiation		Palliation; died of recurrence, May, 1927
March, 1924	51 M	Intrinsic	Squamous cell epithelioma, grade 2	Irradiation	3	Receiving colloid gold at home 3½ years later
Oct., 1924	43 F	Intrinsic	Squamous cell epithelioma	Exploration, mastoidectomy and irradiation		No benefit; died of abscess of temporal lobe 3 months later
Jan., 1925	55 M	Extrinsic	Basal cell epithelioma	Radical mastoidectomy and removal	1	Probable recurrence 14 months later
March, 1926	51 F	Intrinsic	Squamous cell epithelioma, grade 2	Exploration and irradiation		Probably palliation only; died; date unknown
April, 1928	50 M	Extrinsic	Adenocarcinoma, mixed tumor	Excision, May, 1928, and April, 1936, and irradiation	8	Returned with recurrence after 8 years; died of recurrence 3 years later
Sept., 1928	70 M	Extrinsic	Adenocarcinoma, grade 3; squamous cell epithelioma, grade 3	Cautery excision, diathermy and irradiation	2	Well 2 years after treatment
Jan., 1929	55 M	Intrinsic	Fibrosarcoma, grade 3	Biopsy and irradiation		Palliation; probably dead
Aug., 1929	65 M	Extrinsic	Squamous cell epithelioma, grade 3	Cautery excision and diathermy		Died of meningitis 1 month after operation
Dec., 1929	68 M	Extrinsic	Basal cell epithelioma	Diathermy and irradiation	2	Well 2 years after treatment
June, 1930	54 M	Extrinsic	Adenocarcinoma, mixed tumor type	Excision and irradiation	8½	Died 10½ years after treatment; cause unknown
Oct., 1930	42 M	Intrinsic	Squamous cell epithelioma, grade 1	Exploration and irradiation	Unknown	Patient could not be traced
June, 1931	50 F	Extrinsic	Adenocarcinoma and squamous cell epithelioma, grade 3	Diathermy, radical mastoidectomy and irradiation	10½	Well 10½ years
June, 1931	45 F	Intrinsic	Hemangio-endothelioma, grade 2	Radical mastoidectomy and irradiation	10	Well 10 years
Mar., 1932	63 M	Extrinsic	Basal cell epithelioma	Diathermy, radical mastoidectomy and irradiation	9½	Well 9½ years

Most of this table appeared in the article by these same authors, entitled: "Malignant tumors of the middle ear and the mastoid process" which appeared in the Archives of Otolaryngology, 37:149-168, (Feb.) 1943, and in the Transactions of the American Academy of Ophthalmology and Otolaryngology for Jan.-Feb., 1943. In any cases in which more recent information concerning results was available, however, it has been supplied here.

tional and effective procedure of exposing the tumor surgically, removing it with electrocoagulation under direct observation, and implanting radium points directly into the wound and applying radium packs or roentgen therapy externally.

**Surgical Procedure.**—The wide removal of the accessible portion of the neoplasm by means of electrocoagulation, either with the coagulating current, the cutting current, or both, seems definitely to be an improvement over excision. Often the tumor is fixed to the mastoid process and

must be stripped directly from the bone. Frequently, it is impossible to avoid injuring the facial nerve, if it has not already been destroyed. If there is any question regarding the possibility of invasion of the bone, the involved portion should be removed and the mastoid cells opened. Perforation of the pinna may be present, in which event it is necessary to remove enough of the full-thickness of this structure to include a wide margin of the normal tissue. When, as is commonly true, the growth fills the external auditory canal or extends deeply along its walls, electro-

TABLE I (Continued)

Date of registration	Age, years, and sex	Site of origin of tumor	Pathologic Condition	Treatment	Freedom from recurrence, years	Results
Sept., 1932	54 F	Extrinsic	Basal cell and squamous cell epithelioma, grade 2	Diathermy		Sequestrum removed at home 4 months later; not traced thereafter
Oct., 1932	52 F	Extrinsic	Basal cell and squamous cell epithelioma, grade 1	Repeated removal with cautery, diathermy and irradiation; dissection of lymph nodes	1+	Died of recurrence after 8 years
Aug., 1933	47 F	Intrinsic	Squamous cell epithelioma, grade 4	Radical mastoidectomy and irradiation		Palliation; died of recurrence after 8 months
Feb., 1934	59 M	Extrinsic	Basal cell and squamous cell epithelioma, grade 1	Diathermy and irradiation	7	Well 7 years
June, 1934	50 F	Extrinsic	Basal cell epithelioma	Diathermy, radical mastoidectomy	7	Well 7 years
Aug., 1936	43 F	Intrinsic	Squamous cell epithelioma, grade 3	Exploration of mastoid and irradiation		Palliation; died of recurrence after 16 months
Nov., 1936	65 M	Extrinsic	Squamous cell epithelioma, grade 2	Cautery excision, diathermy and irradiation		Died of meningitis and septicemia on fifteenth day
Jan., 1937	44 M	Extrinsic	Squamous cell epithelioma, grade 1	Radical mastoidectomy and irradiation		Palliation; died 4 years later, probably of recurrence
Feb., 1937	42 F	Intrinsic	Hemangio-endothelioma, grade 1	Exploration, mastoidectomy and irradiation	3½	Well 3½ years later
Oct., 1937	66 F	Intrinsic	Squamous cell epithelioma, grade 2	Biopsy and irradiation	3½	Well 3½ years
April, 1938	59 F	Extrinsic	Basal cell and squamous cell epithelioma, grade 1	Diathermy, radical mastoidectomy and irradiation	3¾	Well 3¾ years
April, 1938	57 F	Intrinsic	Squamous cell epithelioma, grade 3	Radical mastoidectomy diathermy and irradiation; gland dissection	2½	Treated elsewhere for recurrence 8 months later
June, 1938	48 F	Extrinsic	Adenocarcinoma (cylindroma)	Diathermy, radical mastoidectomy and irradiation	2½	Well 2½ years
Dec., 1938	46 F	Intrinsic	Hemangio-endothelioma, grade 1	Removal and irradiation		No recurrence after 4 years
Oct., 1939	42 F	Intrinsic	Hemangio-endothelioma, grade 1	Radical mastoidectomy and irradiation	2	Well 2¾ years
Oct., 1939	80 F	Intrinsic	Squamous cell epithelioma, grade 2	Biopsy and irradiation		Probably palliation only; patient could not be traced
Nov., 1939	27 M	Intrinsic	Hemangio-endothelioma, grade 1	Exploration, mastoidectomy and irradiation	1½	No recurrence when patient was observed last, 1½ years later
Aug., 1941	37 M	Intrinsic	Hemangio-endothelioma, grade 1	Exploration, mastoidectomy and irradiation		Returned with recurrence after 27 months
Sept., 1941	33 F	Intrinsic	Hemangio-endothelioma, grade 1	Radical mastoidectomy and irradiation		No recurrence after 2¾ years
Dec., 1941	3 F	Intrinsic	Neurofibrosarcoma	Radical mastoidectomy, diathermy and irradiation		Died 3 months after operation

coagulation is carried as far as it is possible to visualize the tumor. The mastoid process then is opened and, unless a neoplasm is encountered, the procedure at once is completed as a radical mastoidectomy and the posterior wall of the canal is removed. If tumorous tissue is encountered on removal of the bony cortex, as is often the case, this tissue is destroyed with the diathermy electrode, the dissection of bone being continued as necessary to expose more of the neoplasm. In this way, electrocoagulation and dissection of bone

are alternated until the tumor has been removed completely. During this process a varying portion of the dura may be exposed. In fact, the facial nerve, a wide area of dura and a considerable part of the lateral sinus, the jugular bulb and other intracranial structures may be uncovered. As the bony posterior wall of the external auditory canal is removed, if this wall has not already been destroyed by the pathologic process, the portion of the tumor that could not be reached through the meatus is rendered accessible.

Provided the dura is intact, surprisingly little postoperative reaction usually follows the surgical procedure even though the neoplasm has been extensive and has necessitated intensive electrocoagulation. There is no doubt that in questionable cases the risk of meningitis and of other intracranial complications is increased greatly by attempts to deal with such conditions conservatively and by failure to open the mastoid process and to expose the dura. After surgical intervention the patient as a rule experiences great relief from pain and, if the operation has been complete, cessation of the otorrhea is phenomenal. However, if the neoplasm is infiltrating the dura, any relief from symptoms produced by removal of the bulk of the tumor is likely to be only transitory, and prompt recurrence is almost sure to occur even though intensive irradiation is used to supplement the operation.

It has been our practice routinely after surgical removal of a malignant neoplasm of the middle ear and mastoid process to place radium points or tubes directly in the operative cavity and to employ a fairly caustic dose. A few days after operation, this treatment is supplemented with radium packs or roentgen therapy. When the mastoid process is opened, if the tumor is found to be highly malignant and the involvement so extensive that complete surgical removal appears impracticable, no attempt at surgical exenteration is made. Instead, radium points or tubes are immediately implanted directly into the growth and the wound either is sutured loosely or a gauze pack is inserted to hold the radium in place. Also, in some cases of extensive, highly vascular neoplasms, the bleeding is uncontrollable and it is necessary to terminate the operation, insert radium and pack the wound.

Considerable necrosis of bone usually results from the electrocoagulation and irradiation. In the mastoid process the resultant sequestrum separates slowly, often requiring a year or longer. Because it often is impossible to determine the extent of the necrotic process, it is inadvisable to attempt to remove sequestra before they have loosened, for excessive trauma is likely to result from such efforts and there is a possibility of meningitis. On the other hand, if removal is delayed until separation is complete, the process will be found well walled off, there is no appreciable trauma and epithelialization of the wound takes

place promptly, even though a wide area of dura may be uncovered. Should evidence of recurrence of the neoplasm appear at any time after the operation, however, removal of the sequestrum and biopsy may become necessary even though the dead bone still is fixed firmly.

### Prognosis

In cases of malignant tumors of the middle ear and the mastoid process, the malignant process extends by direct contiguity; metastasis rarely occurs and dissection of the lymph nodes is not indicated unless they are involved. Extension into the cervical lymph nodes took place in only two of the cases in the series under consideration.

The result likely to be obtained in any given case of malignant tumor of the middle ear and the mastoid process is difficult to anticipate because of the great variation in the factors involved. The nature of the neoplasm and its activity and extent are extremely important and it frequently is impossible to determine these until the mastoid process and the tympanum have been explored. In many cases, the tumor will be found so extensive and highly malignant that palliation only can be expected. On the other hand, a growth that has appeared clinically to be bordering on inoperability may be found on exploration to be readily removable. This has been noted especially in cases of adenocarcinoma of mixed tumor type. In our experience, one of the most frequently encountered intrinsic growths is a hemangio-endothelioma (angiosarcoma) which, although it usually is of a low grade of malignancy, is so highly vascular that clean surgical removal often is impossible. In fact, in many cases electrocoagulation will not control the bleeding and coagulation cannot progress because of it.

### Results

A summary of the results obtained in the thirty-eight cases in this series in which treatment was given is presented in Table I. It will be noted that twenty patients lived two years or more after treatment, fifteen lived three years or more, ten lived seven years or more, eight lived eight years or more, three lived more than ten years and one lived fifteen years.

### Summary and Conclusions

Malignant tumors involving the middle ear and the mastoid process occur more frequently

than the medical literature would lead one to believe, and the prognosis is more satisfactory than generally is thought. The symptoms and clinical features of intrinsic malignant disease at times are the same as in cases of inflammatory disease of the middle ear and the mastoid process, and

exploration and biopsy may be necessary for diagnosis. The most effective form of treatment for neoplasms of this type is a combination of electrocoagulation, radical mastoidectomy and irradiation, and in indicated cases this treatment often is of considerable benefit.

## VIRUS PNEUMONIA

### A Résumé and a Therapeutic Suggestion

HERMAN J. WOLFF, M.D.  
Saint Paul, Minnesota

**S**INCE the first description of what we are accustomed to call "virus pneumonia," it has been found that there are many types of this disease, which from time to time come to the attention of the practicing physician. The use of bacteriological methods, and also the use of sulfonamide drugs have thrown this condition into a separate category and have established it rather as a group of diseases because of failure of response to the sulfonamide drugs, and because of failure to isolate any single etiologic agent in its study. We may consequently classify all virus pneumonias into two forms: (1) nonbacterial pneumonias of known virus or rickettsial origin; and (2) atypical pneumonias of unknown etiology.

The most common virus pneumonia of known etiology is influenzal pneumonia, due to the filtrable virus which is known as the virus of Smith, Andrewes and Laidlaw. This virus was isolated in 1936, is known as Virus "A," and is frequently found to have an associated staphylococcus infection, or it may be associated with a hemolytic streptococcus as a secondary infector. Recently an influenzal virus known as Virus "B" has also been found. A second condition of known virus etiology is psittacosis, which has been found to be due to minute cocco-bacillary bodies known as the Levingthal, Coles, Lillie bodies. According to some observers, these may not be considered as true virus bodies, and they are being intensively studied at the present time because the pathology which they produce does resemble that produced in our present form of virus pneumonia. Etiologically, of course, psittacosis is known to result from exposure to infected parrots. It has a higher

mortality than the condition under study, and the so-called virus has been isolated by the injection of sputum into mice. It is also being studied at the present time because of the antigenic relationship of this virus to that of lymphogranuloma venereum, trachoma, and inclusion blennorrhea. However, the interesting fact remains that these last three conditions are chemo-therapeutically susceptible, whereas the other conditions are not. A third condition of virus etiology is ornithosis, a disease recently classified and named by Meyer, which is due to a "psittacosis-like" virus found frequently in aviaries and found also in pigeons and barnyard fowl. It is interesting to note that a great many pneumonias in the New York area have been known to be due to the virus of ornithosis, so that this one form of atypical pneumonia will probably be called ornithotic pneumonia.

A large group of virus diseases which have pneumonic manifestations are those due to rickettsia, the most common of which are typhus and Rocky Mountain spotted fever. Rickettsia are small gram negative rod-shaped bodies, 1 to 1.5 micra in diameter, often coccoid in shape and may be found in the feces of the flea and louse which are common transmitters of the disease known as typhus, and in that of the tick, which commonly is a transmitter of Rocky Mountain spotted fever. The rickettsias responsible for these diseases have been named and isolated, and the fact that pneumonias of virus origin do develop in these conditions has been well established.

Lastly, any consideration of virus pneumonia would be incomplete without mentioning "Q" fever. This disease was first described in Australia and is thought to be rickettsial in origin. The rickettsia is very like that which is isolated in

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typhus and Rocky Mountain spotted fever but it fails to agglutinate the Bacillus proteus X19 or XK, a reaction which is known as the Weil-Felix reaction, and there is no cross immunity present. The rickettsial body found in Australian "Q" fever is known as *R. burneti*, whereas that found in typhus and Rocky Mountain is known as *R. prowazi*. Recently an American counterpart of Australian "Q" fever has been found, and it is now known as American "Q" fever. The rickettsia which is known as *R. diaporici* is very like that found in Australia and the current disease has been described in epidemic form at the National Institute of Health in Washington, D. C. The difference between Australian and American "Q" fever is that there has been no definite pulmonary involvement in the Australian cases. By way of historical interest, it may be mentioned that Australian "Q" fever derived its name originally from the fact that the first cases were described in Queensland, Australia, from whence the letter "Q" was used to designate the name of the disease.

With the foregoing summary of virus diseases well in mind, it is now possible to consider the type of so-called virus pneumonia which has been confronting the physicians throughout most of the United States during the past several years. This pneumonia has been perhaps best designated by the Surgeon General as "primary atypical pneumonia, etiology unknown." It is also known as bronchopneumonia—Type X, acute diffuse bronchiolitis, acute pneumonitis, and acute interstitial pneumonia. Fundamentally, the disease is really a syndrome, probably with multiple etiologic factors responsible for its establishment, and as time goes on our knowledge of the disease will no doubt be enhanced by more definite knowledge of the true etiologic agent or agents. The disease occurs in epidemic form at times. It appears to affect both sexes equally, and has a particular predilection for young adults. It has no regard for season and is probably spread by contact. The incubation period of the disease has been variously estimated at from seven to twenty-one days, although some workers have claimed that they have definite knowledge of the disease going through an incubation period of only one to two days. Clinically this form of pneumonia is characterized by its insidious onset (usually), and the predominating symptoms are fever, malaise, headache, chilliness,

and cough. To elaborate further on these symptoms, one might state that the fever may range up to 105 degrees, and that it may follow what is known as a steeplechase type of temperature curve. The fever may last up to three weeks or slightly more. The headaches are usually severe, especially early in the disease. Chilliness is the rule rather than real shaking chills, which are characteristic of true lobar pneumonia. The chilliness, however, is a very annoying symptom and, in many patients, it alternates with drenching sweats which are so severe as to necessitate frequent changes of clothing, and as to certainly render hospitalization advisable. The malaise is out of proportion to the type of fever and to the illness of the patient.

The physical findings are of interest. The first striking fact is the observation that the patient is usually not as sick in appearance or in action as the chart would seem to indicate, and this fact alone is very reassuring in many instances. Frequently, the mild cases are ambulant, but the serious ones may be so ill as to demonstrate cyanosis and dyspnea. On physical examination of the chest at first there may be no findings whatsoever. Very rarely is there a change to percussion. Within a few days rales may appear and frequently this may be preceded by roughening in the breath sounds. The râles may persist long after normal temperature has obtained. The râles are usually sticky in character and wheezing and musical in nature, and only rarely is bronchial breathing heard, and in these instances usually only over a small area. The pulse is usually slow in proportion to the temperature, and rarely is there any dilatation of the alae nasa. Abdominal distention is rare, herpes is rare, and occasionally a palpable spleen may be found.

The laboratory findings in virus pneumonia are not markedly significant. The white blood count is usually normal, or it may be decreased, and only very rarely is an elevated count seen. The urine examination usually reveals nothing of importance. As might be expected, the x-ray of the chest is of utmost significance in rendering a satisfactory diagnosis. The x-ray findings may demonstrate a large area of consolidation but frequently only a small area in the hilus region itself may be encountered. The area may be round or may be fan-shaped. As the disease progresses

this area may extend to the periphery of the lung. It is rare to find fluid present in the pleural cavity during the course of the disease. Lateral views will often help to localize areas of consolidation to the hilus region. Occasionally multiple areas of consolidation are seen and rarely there may be subsequent areas appearing at varying time intervals either in the same or opposite lung. The clinical course of the disease is usually slow. The white blood count may elevate as the disease progresses. The fever subsides by lysis usually in any period of time up to three weeks, and occasionally it may persist even longer. During this period, chills and steeplechase type of fever may predominate for the entire time.

There are very few complications of this disease. Laryngitis and tonsillitis are a common accompaniment, sinusitis is probably less common, and only occasionally has otitis been described. There have also been a few instances of pneumonia due to a contaminating organism such as streptococcus or staphylococcus, following a true virus pneumonia. Fortunately there have been few opportunities for postmortem pathologic studies. In the instances where such studies have been feasible, patchy hemorrhagic areas of so-called interstitial bronchial pneumonia have been found. No definite etiologic agents have been isolated in most of the virus pneumonia seen in the Middle West, and it has been difficult to state in just what category of virus pneumonia most of these cases fall. Many studies have been done, including passage through the ferret, without results. There have been questionable results in the mongoose as published by Weir and Horsfall. The diagnosis will be uncertain until further work is done with this method of study, but there is no doubt in the minds of most investigators that the diagnosis of virus pneumonia should be a laboratory procedure in order to separate out those other virus diseases which may produce a similar clinical picture.

Treatment of virus pneumonia has not afforded the clinician much opportunity for a display of skill. For the most part it may be briefly summarized as supportive therapy with the relief of cough a predominant feature. The sulfonamide drugs are certainly not of value but may be used empirically until an accurate diagnosis is made. Following the accurate diagnosis of virus pneumonia the sulfonamide drugs may be either dis-

continued or continued in markedly reduced amounts because of their bacteriostatic value for the prevention of complications. The use of transfusions has been suggested and was first carried out by Knieland and Smetana in 1940. The results, however, were not considered of extreme value. Flexner and Garon attempted the transfusion of plasma without too successful results. In a series of cases seen by the author, it was decided that it might be of value to use the injection of convalescent serum in an attempt to control the disease or shorten its term. A brief résumé of a few of these cases will be given at this time. The first case is that of an intern at the Miller Hospital who subsequently became the donor of the first immune serum used.

*Case 1.*—F. M., a white man, aged twenty-four, was admitted to the hospital on October 21, 1942, with a spiking temperature as high as 103.8. This persisted for sixteen days with patchy involvement of both lungs. The lesions would appear in various portions of the lung and run through their course, and the patient was quite ill at all times until resolution finally took place. He was dismissed on November 15, 1942. About two weeks later his younger brother, who is the subject of Case 2, became ill.

*Case 2.*—L. M., a boy aged thirteen, was admitted to the Miller Hospital on December 1, 1942, with a temperature of 104 degrees, and a history of illness beginning on November 29, 1942, or exactly two weeks after his older brother was dismissed from the hospital. On admission he was found to have pneumonia of the left lower lobe, his temperature reached as high as 104.6, and daily rose above 104 degrees. On December 6, or six days after admission, he was given a first injection of 25 c.c. of convalescent serum, and this was repeated on December 7, following which his temperature was 100 degrees. On December 9 his temperature was 99 degrees and it remained normal thereafter. In this case there was a very marked symptomatic and general improvement following immediately after the giving of the convalescent serum.

*Case 3.*—Mrs. V. S., aged thirty-nine, was admitted to the hospital on December 10, 1942, with pneumonia of the right lower lobe. She had a spiking temperature up to 101 degrees. This continued for six days and on December 16 and December 17 she was given immune serum which was followed by prompt regression to normal temperature so that she was dismissed from the hospital on December 20, or three days after the second administration of convalescent serum.

*Case 4.*—Mrs. R. G., aged forty, was admitted to the Miller Hospital, September 19, 1943, and discharged on October 19, 1943, with a diagnosis of pneumonia of the right lower lobe and right hilus, and left upper

lung field. The x-ray picture was characteristic of atypical primary pneumonia. Her temperature rose to 104.4 and after the eighth day was still ranging above 102 degrees where it remained until the fifteenth day, when her first injection of 25 c.c. of convalescent serum was given. This was repeated on the sixteenth day of her illness. Her temperature reached only 99.6 degrees on the seventeenth day and was normal thereafter. It is interesting to note that in this case an x-ray examination of the chest made on the thirteenth day of her illness, which was two days prior to the first serum, showed a further extension of the pneumonia on the right with only slight resolution beginning on the left. This case again represents prompt response to the use of convalescent serum.

### Conclusions

Primary atypical pneumonia of unknown etiology is a disease with which all physicians have had to reckon in the past several years. The present résumé is justified because of the apparent increasing incidence of the disease, and because of the scope of the subject which is truly a global one, and one which will probably require even greater familiarity in the future. Finally, this report is justified because of the suggested

value of convalescent serum in the treatment of primary atypical pneumonia, the results of which have been outlined in this paper so as to form the basis of a preliminary report and to encourage the further use of this method of treatment so that an increased experience in its application may soon be developed.

### References

- Bowen, A.: Acute influenza pneumonitis. Am. J. Roentgenol., 34:168, (Aug.) 1935.
- Conlin, F.: Atypical pneumonia of unknown etiology; so-called "virus pneumonia." Nebraska M.J., 28:47, (Feb.) 1943.
- Dingle, J. H., and Finland, M.: Medical progress; virus pneumonias. New England J. Med., 227:378, (Sept. 3) 1942.
- Finland, M., and Dingle, J. H.: Medical progress; virus pneumonias. New England J. Med., 227:342, (Aug. 27) 1942.
- Flexner, M., and Garon, M. L.: Virus pneumonia; treatment with convalescent blood. Kentucky M. J., 41:5, (Jan.) 1943.
- Kneeland, V., Jr., and Smetana, H. F.: Current bronchopneumonia of unusual character and undetermined etiology. Bull. Johns Hopkins Hosp., 67:229, (Oct.) 1940.
- Meyer, K. F.: Ecology of psittacosis and ornithosis. Medicine, 21:175, (May) 1942.
- Reimann, H. A.: Viral pneumonias. Bull. New York Acad. Med., 19:177, (Mar.) 1943.
- Reimann, H. A.: Acute infection of respiratory tract with atypical pneumonia; disease entity probably caused by filtrable virus. J.A.M.A., 111:2377, (Dec. 24) 1938.
- Rothenberg, R. C.: Atypical (virus) pneumonia; case with autopsy report. Cincinnati J. Med., 24:152, (June) 1943.
- Spink, W. W.: Atypical pneumonia. Minnesota Med., 26:337, (Apr.) 1943.
- Weir, J. M., and Horsfall, F. L., Jr.: Recovery from patients with acute pneumonitis of virus causing pneumonia in monogoose. J. Exper. Med., 72:595, (Nov.) 1940.

## VARICOSE ULCERS

### A Study of 143 Cases

CHESTER L. HOLMES, M.D., and FREDERICK L. SMITH, M.D.  
Rochester, Minnesota

OUR purpose in this paper is to describe the treatment employed in the Mayo Clinic for varicose ulcers, to summarize the commonly associated condition, and to evaluate the effect on healing of such factors as age and sex.

During 1943, January to December, inclusive, there were encountered at the clinic 153 cases of ulcer of stasis type, that is, ulcers attributable to varicose veins alone or varicose veins with associated obstructive thrombophlebitis. Of these 153 cases, nine were eliminated from consideration because the patients either left the clinic before dismissal or before healing was complete. One other case was excluded because, though varicose veins and evidence of stasis were present, the ulcer primarily was attributable to extravascular spillage of sclerosing agent used in treatment elsewhere. On exclusion of these ten cases, there remained 143 cases, which formed the basis

for this study. Of the 143 cases, the ulcers were unilateral in 133 cases (93 per cent) and bilateral in ten cases (7 per cent).

The duration of the ulcers treated in this series varied from the relatively short period of one week to fifty years, the average duration being 3.6 years. In many cases, one or more ulcers had been present intermittently for many years, but the preceding statement concerning duration applies only to the ulcer presented for treatment and not to the time since inception of the trouble.

The ulcers varied greatly in size from small multiple ulcers to large solitary ones. The diameter of the smallest was 0.5 cm., and that of the largest averaged 10 cm. The average diameter of all ulcers was 2.41 cm. All ulcers were located in the lower 5 inches (13 cm.) of the leg in the posteromalleolar and inframalleolar regions and superior to the malleolus, the majority being just above the inner malleolus.

Stasis dermatitis, pigmentation, edema, brawny

From the Mayo Foundation (Fellow in Surgery, Holmes) and the Section on Postoperative Care, Mayo Clinic (Smith), Rochester, Minnesota.

TABLE I. CONDITIONS ASSOCIATED WITH VARICOSE ULCERS IN 143 CASES.

Condition	Cases	Per Cent of 143 Cases
Stasis dermatitis	81	56.6
Pigmentation	37	25.8
Cellulitis	33	23.0
Edema	30	20.9
Brawny infiltration	29	20.2
Thrombophlebitis	8	5.6
One condition co-existing	50	35.0
Two or more conditions co-existing	93	65.0

infiltration, thrombophlebitis and cellulitis, the conditions most commonly associated with varicose ulcers, are not a result of the ulcers. With the exception of thrombophlebitis, these conditions are sequelae of the primary pathologic condition, that is, stasis with improper oxygenation. Thrombophlebitis, when present, is not a sequela but a primary process in itself. Stasis dermatitis, as would be expected, was the most common associated condition, being present in eighty-one of the 143 cases (56.6 per cent). Pigmentation was present in thirty-seven cases (25.8 per cent), edema in thirty cases (20.9 per cent) and brawny infiltration in twenty-nine cases (20.2 per cent). There was a history, or irrefutable evidence, of thrombophlebitis in eight cases (5.6 per cent). In all cases of open ulcer, of which there were thirty-three (23 per cent), there was some local infection, necrotic slough or definite cellulitis as evidenced by a red, inflamed, indurated and sometimes elevated, margin. In fifty of the 143 cases (35 per cent) only one of these conditions was present; in the remaining ninety-three cases (65 per cent) two or more conditions were present. A summary of the conditions associated with varicose ulcers appears in Table I.

In 123 cases (86 per cent) treatment in the form of ligation and injection was directed toward elimination of the cause of the stasis. The greater saphenous vein was incompetent in 105 of the 123 cases (85.4 per cent). The lesser saphenous vein was incompetent in eleven cases (8.9 per cent) and both the greater and lesser saphenous veins were incompetent in seven cases (5.7 per cent).

In the remaining twenty cases, ligation was contraindicated. In eight of these cases the presence of old thrombophlebitis with evidence of deep occlusion made direct approach impossible

and treatment was confined largely to local attention to the ulcer. In twelve cases the patients were in poor general health or were of advanced age. Three of the twenty patients received injections only. These patients had incompetent venous systems of some type but their age made more complete or permanent forms of treatment unnecessary or unwise.

Ichthyl ointment (3 per cent ichthyl in zinc oxide base) was used as a soothing dressing in 110 of the 143 cases. In the remaining thirty-three cases, those in which cellulitis was present, 5 per cent sulfathiazole ointment was used as a dressing. Twenty-seven of these thirty-three patients (81.8 per cent) received preliminary treatment in the form of hot wet packs of aluminum subacetate (0.5 per cent), dressings and elevation of the extremity.

During the ambulatory period of treatment all 143 patients were treated locally by pressure to prevent edema. In order to create the best conditions for healing of varicose ulcers with stasis it is necessary to prevent edema of hydrostatic type and, during treatment, to prevent edema of inflammatory type. The latter may follow injections of sodium morrhuate or other sclerosing agent. In this report this particular phase of treatment, that is, control of edema, should be emphasized.

In most cases pressure was applied by use of a fairly thick pad of sterile cut gauze. Occasionally a piece of rubber sponge was placed over the ulcer after application of ichthyl ointment. Then the entire leg from the toes to the knee was wrapped with a 3 or 4 inch (8 or 10 cm.) fabric bandage which is elastic (Ace bandage), firm traction being maintained throughout application, particularly when incorporating the pressure pad. The ulcers were dressed daily.

In a few cases an elastoplast dressing was used, particularly when the patients lived in the immediate vicinity and commuted to the clinic at intervals of seven to ten days. In principle this dressing is the same as the Ace bandage but it is somewhat more stable and requires no attention from the patient between dressings.

After the surface infection is cleaned up and the necrotic slough is replaced by healthy granulation tissue, epithelialization proceeds rapidly under the pressure dressing. Skin graft was utilized to speed the healing process in seven cases in

which large ulcers existed. In these cases the margins of the ulcers exhibited a peculiar indolence which is seen occasionally in lesions of great chronicity. This apparently is attributable to subcutaneous fibrosis with consequent paucity of blood supply. There were twelve cases in which the ulcers had an average diameter greater than 7 cm. Of these twelve cases, in seven (58.3 per cent) skin graft was required.

In all 143 cases healing of the ulcers occurred. The average time required for healing was eighteen days, the longest time being eighty-two days and the shortest, three days. The average time of healing for the eighty-two women, who comprised 57.3 per cent of the series, was nineteen and a half days. The average time for the sixty-one men, who comprised the remaining 42.7 per cent, was sixteen days.

According to this study, the age of the patient made little difference in the healing of varicose ulcers under treatment, in spite of the fact that such accompaniments of advancing years as decreased vascularity, changes in blood vessels and atrophy of tissues allegedly delay healing. The oldest patient was eighty-two years of age and the youngest was twenty-two. The average age was 50.9 years. Ninety-nine of the patients (69.2 per cent) were more than forty-five years of age and forty-four patients (30.8 per cent) were less than forty-five. The average time of healing in the older group was seventeen and a half days and in the younger group, eighteen and a half days.

### **Summary and Conclusions**

One hundred forty-three cases of varicose ulcers were studied as to the relationship of age and sex to incidence and to healing and as to location, size and duration of the ulcers. There were eighty-two women (57.3 per cent) and sixty-one men (42.7 per cent). Healing under treatment apparently was somewhat faster in males than in females but since the difference was only approximately three and a half days this was not conclusive. The age of the patient had

little effect on healing. The majority of the ulcers were situated just above the inner malleolus. The smallest was 0.5 cm. in diameter and the largest 10 cm. The duration of the ulcers varied from one week to fifty years.

In this series the conditions most commonly associated with varicose ulcers, in order of frequency, were stasis dermatitis, pigmentation, cellulitis, edema, brawny infiltration and thrombo-phlebitis.

The treatment employed, which is discussed in detail, consisted in general of ligation and injection, dressings of ichthyoil ointment and the application of pressure. Healing of the ulcers occurred in all cases. The results of this regimen were not compared with other advocated forms of treatment, such as ultra-violet light, subcutaneous infiltration with oxygen and various topical applications, since there were no series thus treated at the clinic on which controlled observations had been made. Although this regimen undoubtedly can be improved, we believe it embodies the most physiologic approach to healing of these ulcers that has to our knowledge been employed.

On the basis of this study, the conclusion was reached that in order to secure healing and prevent recurrence it was essential to remove stasis by ligation and injection. It is well known that once an area has been ulcerated it is extremely susceptible to trauma and to spontaneous breakdown if stasis is still present. Thus, the prognosis is much better in ulcers attributable to varicose veins, in which the source of stasis is usually readily eradicated, than it is in varicose ulcers associated with deep thrombophlebitis, in which the prevention of recurrence is dependent largely on continuous counterpressure.

In the future the number of varicose ulcers undoubtedly will decrease. This trend already has become apparent. This is a result of the fact that it has become well known that there is a treatment of varicose veins and also that chronic ulcers, which are difficult or impossible to heal, are the price of neglect.

## HISTORY OF MEDICINE IN MINNESOTA

WILLIAM SITGREAVES COX

By JOHN M. ARMSTRONG, M.D.

Saint Paul, Minnesota

SOME five or more years ago the small surgical instrument called a "fleam" came into my possession. It is a mechanical lancet and was in use in the early years of the last century. While the instrument itself may be regarded as an antique and a collector's item, the story of its owner surpasses in interest the instrument itself. Had the owner not had his name engraved upon the instrument, my curiosity would not have been aroused and his history would not have been known. Inquiry and some research have revealed the following story.

William Sitgreaves Cox was born in Philadelphia in the year 1790. His father, James Cox, a man of wealth, had come from Bermuda after the War of Independence and established the first marine insurance company in the United States.

On January 16, 1809, while a student at Princeton, W. S. Cox received a warrant in the Navy and in March of the same year was appointed a midshipman. This appointment was revoked the following May as there was no vacancy and he was given a furlough. There is attached to his naval record a note that he was ordered to proceed to India on an East India merchant vessel in order to acquaint himself with navigation and life at sea. It is believed that he visited China also.

On February 26, 1811, after his return, William Cox was ordered to the brig, *Argus*, under the command of Captain James Lawrence.

War with Great Britain was declared on June 18, 1812, and he served with Lawrence on the *Argus* and on the *Hornet* until Lawrence was relieved of the command of the latter vessel.

About the middle of May, 1813, Lawrence, accompanied by Cox, arrived in New York on his way to Boston to take command of the frigate *Chesapeake*, which was being refitted in Boston harbor.

Lawrence had been most successful in all his engagements with the British and was the hero of the American people, who regarded him as invincible. He was wined and dined in New York and presented with the keys of the city and a piece of plate. While in New York, Lawrence bought a bugle. As this instrument played a somewhat decisive part in the tragedy which ended the careers of both Lawrence and Cox, it may be well to explain the reason for its purchase.

Naval battles of that day were largely duels between individual ships and usually terminated in the capture of one of the ships by boarding and hand-to-hand fighting. In fact, half the crew of a man-of-war were told off as boarders in anticipation of such an event. The signal for boarding was a roll of drums. Lawrence thought that a bugle could be better heard than drums during the din of battle, hence his purchase.

Lawrence reached Boston on May 18, and found the *Chesapeake* ready for sea. Six days later he assembled his crew and asked if any of these could blow a bugle. But one man could, a Portuguese negro, who demonstrated his ability by blowing a few notes. The bugle was entrusted to him.

On the last day of May the British frigate *Shannon*, under the command of Captain Philip Bowes Vera Broke, appeared off Boston harbor. Lawrence took this as a direct challenge to himself. It must be remembered that six months previously Lawrence had found a British ship in the harbor of Santiago, Brazil, and chal-

lenged it to come out and fight. The British captain refused. The American newspapers dubbed the British captain a coward. This incident one might say compelled Lawrence to regard the *Shannon's* presence as a direct challenge, as it was indeed. Broke had sent a direct challenge to Lawrence but it did not reach Boston until after the engagement was terminated.

This same evening Lawrence, accompanied by Cox, called on Admiral Bainbridge, commander of the naval station at Boston, and made three requests of him: "That his men be paid the arrears on their pay, that Cox be made a lieutenant and that he might borrow some seamen from the other ships in the harbor."

Bainbridge assented to the first two requests and to the latter replied that "he could if he wanted to," or words to that effect. There was ill feeling between Bainbridge and Lawrence over the division of prize money and considerable jealousy on Bainbridge's part.

At noon the next day (June 1) the *Chesapeake* put to sea and followed the wake of the *Shannon*.

The *Chesapeake* approached the *Shannon* from the rear and to windward. The *Shannon* hove to and waited. When only forty yards separated the ships, Lawrence gave the order to "luff her" and then put down the helm. This order was plainly heard aboard the *Shannon*. Broke perceived Lawrence's intention to bring the two ships yardarm to yardarm. I may say here that this order was a distinct surprise to the crews of both ships, as both expected the *Chesapeake* would cross the *Shannon's* wake, a maneuver which would have been the tactical thing to do.

As the order was given, the *Chesapeake* opened with a volley of musketry only, the *Shannon* held her fire and waited, manning her starboard batteries. When the *Chesapeake* had completed her maneuvers and was head on, the *Shannon* opened fire and raked her from stem to stern.

Her first broadside killed and wounded 110 of the 150 men on the spar deck. Lawrence was wounded in the leg, Lieutenant White decapitated and the officer commanding the marines killed. With the succeeding three blasts from the *Shannon*, Lieutenant Ballard was killed and three men in succession killed at the wheel. The steering gear was demolished and the halyards and rigging of the jib shot away so that the *Chesapeake* became unmanageable and fell away. Her stern struck the *Shannon* amidships. At about this same time the ammunition box on the *Chesapeake's* spar deck caught fire and enveloped the ship in smoke which added to the confusion.

Lawrence gave the order for boarding, but the bugler could not be found as he had hidden under one of the boats and when pulled out was so frightened he could not blow a note. The order, thus delayed, had to be passed by word of mouth.

Lieutenants Budd and Cox were on the gun deck. Cox received the order from Budd. He ordered out his boarders and drove them before him to the spar deck. Cox was not attacked as a boarder but his guns were not bearing on the *Shannon* because of the position of the ships.

As Cox turned to go back to his station he observed Lawrence fall, as a result of a second wound in the groin. With the help of a sailor, he carried Lawrence to the foot of the stairs below the gun deck. Here he left him to be carried to the surgeon and regained his station. He then observed the *Chesapeake's* crew tumbling pell-mell down the forward hatch. In the meantime he had found one of his guns bearing on the *Shannon* and discharged it; this was the last gun fired from the *Chesapeake*.

Midshipman Higginbotham, who was at the foot of the forward hatch when the crew came tumbling down, said "Shall I cut them down, Sir?" to which Cox replied, "It is of no use, enough of our men have been killed already." Cox then

endeavored to rally the retreating crew, but the British had thrown a grating over the hatch and their marines were shooting down it.

Cox then ran and ascended to the spar deck by the rear hatch. He fought his way forward, receiving cutlass wounds on the knee and neck, and joined the twenty-four men of the crew, half of whom were unarmed, and were huddled in the bow. Here he surrendered. Lieutenant Ludlow had been killed and Lieutenant Budd taken prisoner while Cox was on the gun deck. The reason why half of those in the bow were unarmed was that the arms for the boarders were piled in the stern where the British entered.

Let us now see what took place on the *Shannon*. When the ships struck, Captain Broke, observing the confusion on the *Chesapeake*, sprang aboard the *Chesapeake* shouting, "Follow me who can." The only opposition he met was from the chaplain of the *Chesapeake*, who had volunteered as a combatant and who had just ascended by the rear hatch.

The chaplain fired his pistol at Broke but missed, and Broke promptly almost severed the chaplain's arm with his sword. The British paused a moment to gain numbers before driving forward.

The result of this drive has been told. In all, the engagement lasted eleven minutes, five minutes of gun fire and four minutes of hand-to-hand fighting. Each ship fired four broadsides and the *Chesapeake* two extra guns. Cox and Budd were the only officers, except a few midshipmen, to come out alive.

The *Shannon* towed the *Chesapeake* to Halifax, and some months later the prisoners were exchanged.

As is customary, whenever a warship is lost, wrecked or taken under unusual circumstances, a Court of Inquiry is held. Something had to be done to appease the clamoring public and soothe the wounded vanity of the Navy. Cox was chosen as the scapegoat and in April, 1814, was tried by court-martial on four charges: cowardice, disobedience of orders, desertion from his quarters and neglect of duty, and unofficerlike conduct.

He was acquitted of cowardice, disobedience of orders and desertion from his quarters, but was found guilty of "neglect of duty" because he helped Lawrence below and "unofficerlike conduct" for not cutting down the retreating crew after the British were already in possession of the frigate.

The only defense Cox made was the statement: "I am no coward and I carried Captain Lawrence below at his own request."

His sentence was, "to be cashiered, with a perpetual incapacity to serve in the Navy of the United States."

The day after the trial, members of the court wrote Cox an apology for their action and Cox enlisted as a private in the Army. Most historians, in narrating the story of the engagement, generally refrain from mentioning Cox except to say that he carried his commanding officer below. One historian adds, "He married late in life and went west." Apparently his further history was unknown.

After his discharge from the Army Cox returned to his home in Philadelphia and in 1816 he married. As a wedding gift his father presented him with ten thousand dollars, a considerable amount in those days, to start a wholesale drug business. He remained in business in Philadelphia one year, when he and his partner divided their stock. Cox took his share to Easton, Pennsylvania, where he opened a drug store. Sometime between 1818 and 1824 he returned to Philadelphia and studied medicine with Dr. William Hewson, the elder, as his preceptor. Hewson later was one of the founders of the Jefferson Medical College and held the chair of surgery there.

Cox then returned to Easton and practiced medicine. In 1824 he decided to go abroad to continue his medical studies and to educate his six children. In the spring of that year, with his wife and children, he embarked from New York. He took a cow with him so that the children could have milk during the voyage. The cow died en route but the children survived. The year was spent in Paris, France, where Cox attended the clinic of the celebrated surgeon, Dr. Puytren. In May, 1825, he moved to Neuville, Switzerland, where he placed his children in school. There he remained until October, 1828. The years 1829 and 1830 were spent in Florence, Italy, where he rented the palace of the Duke of Tuscany, and the years 1831 to 1833 at Lausanne, Switzerland. During these latter two years he made an extensive tour of Europe with J. Fennimore Cooper. In 1834 he returned to the United States. Two more children were born in Switzerland, making eight in all.

After a short stay in Philadelphia, Cox returned to Easton where it is surmised that he resumed the practice of medicine, but this is not certain. It is known, however, that he had an interest in a cotton mill there. From 1836 to 1840 he lived on an estate which he purchased near Wilkes-Barre, apparently having given up medicine. While there he suffered severe financial losses, much of his fortune having been invested in railway stocks. He then returned to Philadelphia.

In 1850 a young nephew of Cox's, who had taken orders in the Episcopal Church, returned to Philadelphia from Wisconsin where he had been conducting a mission under Bishop Kemper, the latter having been rector of the church which Cox attended in Philadelphia. The young man gave such a glowing report on the country and of his mission that two of Cox's daughters decided to accompany him when he returned. In May of the next year the three left Pittsburgh by boat on their journey west.

At some point above Cincinnati the young clergyman fell overboard and was drowned. The two women debarked at Cincinnati and after a night spent in prayer decided to continue their journey and with their own funds complete the mission church that their cousin had planned.

The following year Cox, desiring to see his daughters, took his family to Pine Lake, Wisconsin. He liked the country, found the shooting and fishing excellent, and remained there four years. In 1856 Saint Paul, Minnesota, seemed to be a desirable place for investment and he therefore brought his family there and invested heavily in local real estate. The panic of 1857 again depleted his fortune.

Cox remained a resident of Saint Paul until his death, October 17, 1874, although he never practiced his profession there.

Thirty-two years after his death one of his grandchildren happened to read Theodore Roosevelt's "History of the Naval War of 1812" in which the following paragraph describing the engagement between the *Chesapeake* and the *Shannon* occurs: "During the engagement acting lieutenant W. S. Cox cowardly ran below, for which he was cashiered." This was the first knowledge they had that their grandfather was a participant in that battle. This also accounts for our lack of knowledge of his life, as he never spoke of his early career.

#### Bibliographic Notes

Lieutenant Budd was the principal witness against Cox. No doubt this was to save himself, as it is said that when Budd arrived on the spar deck he mistook the British for his own men.

"It was a cardinal principle of sailing tactics that when receiving an attack from to-windward a ship must not permit the enemy to get in her wake, for the reason that the latter could thus gain a position of advantage across the stem to rake; and then luffing up engage from leeward. A ship thus caught by an enemy once in her wake would be at a serious disadvan-

## HISTORY OF MEDICINE IN MINNESOTA

tage, for as Sir Howard Douglas says, 'if she tacks to avoid it (a raking from aft) she would be severely punished in stays by a fire in great part diagonal. If she hangs in stays she will be utterly destroyed and, in coming around on the other tack, she may fall off nearly end-on toward the other ship. If, on the contrary, she bear up to avoid being raked, her opponent may luff, too, and rake her before she can get away."

It is evident, then, that both Lawrence and Broke took the engagement as a duel, Broke as the challenger giving Lawrence his choice of position, and Lawrence refusing to take advantage of it.

The following, signed by William O. Stevens, Professor of Naval History in the United States Naval Academy, appeared in the *New York Times*, May 3, 1918:

"The death of Lawrence was a heavy loss, but the hurt anger of the country was so great that it was as well perhaps for him that he did not live to explain his defeat. The American press loudly demanded a scapegoat for the disaster, and the Navy was anxious to clear itself of the odium. Accordingly, a victim was found in the person of Acting Third Lieutenant William S. Cox.

"On April 14, 1813, a court-martial was instituted on board the frigate *United States* in New York harbor to try such officers of the *Chesapeake* as had been indicted by the court of inquiry. Stephen Decatur presided, and the members of the court included some of the most brilliant officers of the Navy. It cannot be denied, however, that the pressure of public demand for some one was strong upon them.

"Before this court Cox was arraigned on four charges: (1) cowardice; (2) disobedience of orders; (3) desertion from his quarters and neglect of duty; (4) unofficerlike conduct.

"Cox had served under Lawrence on the *Argus* and on the *Hornet* in her celebrated action with the *Peacock*. His conduct on these occasions won him his lieutenancy through the recommendation of his commander for whom he seems to have felt the deepest personal devotion.

"During the fight with the *Shannon* he was in command of a division on the gun deck. When his guns ceased to bear, most of his men left it, some to join the boarders called away to repel Captain Broke's party, others to sneak into the hold. Cox himself was not a 'boarder' but as he found himself standing by a useless gun, he joined the boarders as they rushed up to the spar deck. Just as he reached the deck, he saw his beloved commander twice wounded and falling helpless, crying to his men to 'Rush on.' He caught Lawrence in his arms and with the help of a sailor carried him down to the steerage ladder. At that point he left his burden and tried to regain the spar deck, but by that time the British had battened down the hatch. Upon discovering this he ran to one of the two guns that were serviceable and fired it, the last gun shot from the beaten ship.

"From the gun he hastened forward to try again to gain the spar deck by the forward hatch, meeting Midshipman Higgenbotham, who had just been thrown back, in an attempt to gain the deck, by the panic-stricken crew who were now piling down in heaps. On Higgenbotham's asking whether he should cut the men down with his sword, Cox replied sadly, 'It's of no use, enough of our men have been killed already.' By this time the English ensign was flying over the *Chesapeake's* taffrail.

"As this story came out in the trial, the first two or three charges fell to pieces. Indeed, the witnesses summoned by the prosecution refused to admit that there was anything unbecoming in the conduct of the prisoner during the action with the enemy.

"But it did not help his case for the young lieutenant to hint plainly of the chance of his being offered as a sacrifice to heal the wounded honor and reinstate the naval pride of the nation." The court was looking for flaws in his conduct and they made the most of what they found. Accordingly, he was declared guilty: First, of "neglect of duty" because he had helped Lawrence below—though Cox declared that it was at his commander's request—instead of keeping the deck.

"This was precisely what Captain Hardy did for Nelson at Trafalgar, with the difference that Hardy was in command of the ship—hardly the man to leave the deck in action—and remained several minutes in the cockpit with the Admiral. Yet no one has ever suggested cashiering Hardy for neglect of duty.

"Secondly, Cox was declared guilty of 'unofficerlike conduct' because he refused to butcher the panic-stricken men as they crowded pell-mell down the forward hatch when the ship was already in the hands of her captors. For these crimes the young officer who had fired the last shot in defense of his ship was sentenced, 'to be cashiered with a perpetual incapacity to serve in the Navy of the United States.'"



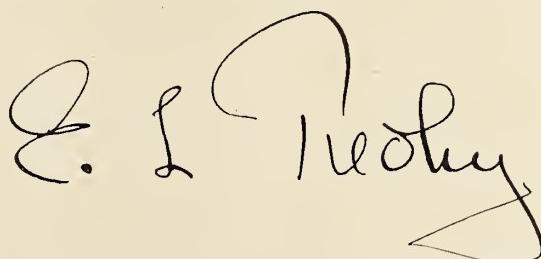
E. L. TUOHY, M.D.  
President, Minnesota State Medical Association

# President's Letter

The "torch passing" is a simple procedure with the president of your Association. The tradition of this letter is now firmly grounded. It is a courtesy extended to your president by the editors of our splendid journal. My predecessors have used this page to maintain a degree of personal touch with you; to inform you concerning administrative movements and developments vital to your interests. An exacting duty faces me to maintain the established standards of my predecessors. You need not be told that your presidents do not direct your Association. They continue their service and assist the Council in molding its policies and formulating courses of action. There is no break in continuity, therefore, with changes of administration; no cabinet turnover or inaugural parade—the new president is simply led up onto a stout platform and sworn in!

Few Association members have any true conception of the work and detail carried on by the Council. The Council is a laborious but decidedly democratic and fully representative body. It has brought about a highly efficient central office directed by Mr. Rosell and his able associates. It is regrettable that each of you cannot be made president in order to really be shown your state organization at work. Impossible, of course. (There would not be enough room in the journal anyway, for all your pictures.) Therefore, I shall attempt, from time to time, to inform you about the work of your Council and committees.

"Within the space of four years our country has produced the most colossal military machine the world have ever known." So alleges a current commentator. Within four more years we shall likely have whatever form of peace humanity (at this stage of development) is ready for. This has been a total, torturing, destructive and uprooting war. We cannot hope that the peace will be much less violent. Violence and uprooting have been visited upon doctors, and with more telling effect than on almost any other group of our citizenry. This is a fact and not a complaint. Doctors were catapulted into war. As individuals, they brought to the military service everything their own diligence, training and civilian citizenship had developed within them. The superior exhibition of these skills has been chiefly responsible for the recovery of the "ninety-seven per cent brought in alive." We are proud that American Medicine was ready for this service. Peacetime unregimented doctors have accomplished what seemed impossible. We stand with the engineers, chemists, transportation and communication experts. Home services have been strained but few neglected. Now the retreat from military regimentation to peace presents problems that may be greater than those incidental to the shift to war. Doctors, uprooted like fully grown trees, find rerooting difficult. In many regions their former patients have become like the "wandering tribes of Israel"—trekking from one defense center to another. War makes necessary centralized guidance from our national capital. Walter Ridder writes from there today, "It is far from all quiet on the Potomac; it is really confusion worse confounded." It is in such periods of turbulence that strange legislation may stem from the brains and consciousness of "star gazers" and social-service-disease-preventers. We may expect almost anything in a period so essentially revolutionary. Well, your officers stand at attention. In the coming months you will hear more and more of what a "mandated" officialdom thinks our people want. We shall need much support from you and from all citizen groups desirous of the best for our great country. Medicine is an example of service, with hundreds of years of organization. It would redound to the common good if other groups and guilds, newly processing their plans and purposes of organization, would study ours and perhaps emulate us.

A handwritten signature in cursive script, appearing to read "E. L. Nealey". The signature is fluid and expressive, with a large, sweeping flourish over the end of the name.

President, Minnesota State Medical Association

# Editorial

CARL B. DRAKE, M.D., *Editor*; GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

## CAFFEINE AND PEPTIC ULCER

THERE is no unanimity of opinion on the part of physicians as to the advisability of prohibiting coffee and caffeine-containing beverages for peptic ulcer patients.

Recent studies, however, have brought out significant facts which indicate very definitely that caffeine is harmful for individuals who have or have had peptic ulcers.

Judd injected guinea pigs and cats intramuscularly with caffeine contained in beeswax and thereby produced gastric ulcers, although no stimulation of gastric secretion nor ulcer production was observed from caffeine injection or ingestion in dogs with Pavlov stomach pouches.

Roth and Ivy\* by means of carefully controlled experiments have shown that caffeine given either orally or intravenously markedly stimulates gastric secretion in man.

After a period of fasting, the stomach was emptied and the secretion of gastric juice determined every ten minutes for a half hour. Then 200 c.c. of water with 250 mg. of sodium benzoate and 250 mg. of caffeine were introduced into the stomach, and after thirty minutes the stomach was emptied and the volume and acid concentration determined every ten minutes until the secretory response had subsided and the basal level once again was reached. Similar tests were made with sodium benzoate alone and an ordinary test meal but the response to caffeine was about two and a half that of these controls.

The significant finding was the difference in acid secretion response in different individuals. In about 85 per cent of those given 250 mg. ( $3\frac{3}{4}$  gr.) of caffeine (the equivalent of two cups of coffee) there was abrupt rise in the total acid secretion lasting fifty to seventy minutes; 10 per cent showed a less amount of acid secreted with a return to the basal starting point in sixty to ninety minutes; about 5 per cent showed a still more prolonged response at a high level. All but

one of thirty-six peptic ulcer patients showed a high and prolonged response.

Further tests with coffee itself and beverages containing caffeine in less amount showed that they, too, stimulate gastric secretion. The average response to tea, Postum, and coffee with sugar and cream was about 60 per cent; Sanka 75 per cent and Coca-Cola 89 per cent that of clear coffee. These drinks, though low in caffeine content, all contain elements other than caffeine which stimulate stomach secretions.

Inasmuch as the acidity of the stomach has much to do with preventing the healing of peptic ulcers and may even be an important factor etiologically, the conclusion seems warranted that those who have or who have had peptic ulcers should not drink coffee, tea, or caffeine-containing drinks. It may be that those who know coffee does not "agree" with them are in the group of 5 per cent of individuals whose gastric secretion shows a high and prolonged response to caffeine. It may not be assuming too much that in some of these individuals caffeine may even contribute in the production of peptic ulcer.

## THE NATIONAL FOUNDATION FOR INFANTILE PARALYSIS

IN our January 1944 issue of MINNESOTA MEDICINE appeared an editorial describing the nation-wide organization of the National Foundation for Infantile Paralysis and its method of attack in combating poliomyelitis. Half or more of the funds collected yearly in each county during the January campaigns culminating on the President's birthday, January 30, are allocated to the treatment of poliomyelitis victims in that county. The remainder is allocated for polio research in established medical centers and for public education. It is the avowed purpose of the Foundation that no sufferer from this disease shall lack the best treatment that medical science has to offer, and every effort is being made to discover means of prevention or specific cure.

The 1943 epidemic of poliomyelitis was bad and the 1944 worse, the latter being next to the

\*Roth, J. A. and Ivy, A. C.: The effect of caffeine on the gastric secretions in the dog, cat, and man. Am. J. Phys., 141:454 (June), 1944.

Roth, J. A., Ivy, A. C. and Atkinson, A. J.: Caffeine and "peptic" ulcer. JAMA, 126:814 (Nov. 25), 1944.

worst in history which was in 1916. Undoubtedly influenced by these facts, the public has been most generous in its contributions to the National Foundation. This year should prove no exception.

So far, the Hennepin County unit of the Foundation has dispensed over \$20,000 for local polio-myelitis activities which includes \$15,000 for the Elizabeth Kenny Institute; \$3,500 to the Shriners Hospital, and \$1,900 to the Curative Work Shop. To date, the cost of patients from Hennepin County who had had free care in the Kenny Institute has amounted to \$16,025 so that the contribution of \$15,000 from the Hennepin County unit of the Foundation has about taken care of the free cases at the Kenny Institute.

The Ramsey County Unit of the Foundation netted over \$7,000 in 1943 and over \$12,000 in 1944. Since October 1, 1943, this unit has paid out about \$7,000 for treatment, which includes \$1,680 for a respirator and \$1,078 for three hot pack apparatuses donated to the Ancker Hospital in Saint Paul.

So far, the Foundation has granted \$492,019.15 to the University of Minnesota of which \$260,000 has been disbursed.

There is no evidence of a dearth of funds collected or spent by county units for local needs, nor in the amount allocated by the National Foundation for research by the University of Minnesota. We can only approve of the policy of the Foundation in keeping the expenditures in medical channels.

## MORE NURSES FOR THE ARMED FORCES

The Army and Navy urgently need some 14,000 more nurses. A *must* order has been sent out for more enlistments at once. With the marked increase in casualties in recent weeks the need for many more nurses is imperative, if the good record of 97 per cent of casualties returned to service is to be maintained. Nothing should be allowed to interfere with giving the best possible care to our soldiers and sailors.

It is the immediate job of the State and District Committees on Procurement and Assignment Service for Nurses to provide the additional nurses at once. They cannot accomplish this dif-

ficult task without the co-operation of the public, the hospitals, and the medical profession, as well as the nursing profession.

There has been a general lack of appreciation of the nursing situation. Patients at home and in the hospitals seem to expect the same nursing care they had before 60,000 trained nurses were extracted from civilian practice. Volunteer nurses' aids and grey ladies have done valiant service in helping to maintain hospital care.

In order to obtain the additional nurses for the services, certain definite procedures will have to be taken.

The public will have to be educated to dispense with luxury nursing and get along on floor nursing in the hospital. Unnecessary hospitalization will have to be eliminated. The medical profession can do much in discouraging both luxury nursing and unnecessary hospitalization.

The use of volunteers to assist in hospital nursing will have to be expanded. It is said that only one-third of those trained and qualified as nurses' aids are helping out. This is a waste of Red Cross funds and unpatriotic.

Nurses in industry and physicians' offices will have to be released either to enter the service or to replace younger nurses in hospitals who can and should enlist.

These are *must* measures to supply the need for nurses for the armed forces. They are paramount in order that the sick and wounded soldiers and sailors may receive the care to which they are entitled.

## DID YOU KNOW?

### **The American Red Cross Aided Last Year:**

over 60,000 victims of disaster . . .

American and United Nations prisoners of war . . . (10,800,000 food parcels were shipped, and additional parcels of clothing and medical supplies)

servicemen and their families, including hospitalized veterans . . .

### **Maintained Last Year:**

more than 700 clubs and rest homes overseas and nearly 200 clubmobiles, also theaters, bathing beaches, and canteens . . .

blood donor centers in 31 cities . . .

facilities in 3,748 of its 3,757 chapters to aid servicemen's families . . .

# MEDICAL ECONOMICS

Edited by the Committee on Medical Economics  
of the

Minnesota State Medical Association

George Earl, M.D., Chairman

## NORTH CENTRAL STATES TACKLE INSURANCE PROBLEMS

The prompt establishment of prepaid medical service or indemnity insurance plans was generally recognized by the North Central Medical Conference which met in Saint Paul, December 10, as one of the most important obligations of organized medicine in this section.

Actually, insurance plans are under way or under serious consideration in every state represented in the conference, including Wisconsin, Iowa, North and South Dakota, Nebraska and Minnesota, as reports of conference members showed.

These plans are in their infancy. They contemplate limited and partial beginnings. But all of them recognize a public demand for action on a voluntary basis which will give promise, at least, of eliminating any excuse for interference by the federal government.

In Milwaukee and in one section of western Nebraska, limited plans are already under operation. In Iowa, preliminary steps have been taken by the Iowa State Medical Society for a relatively complete plan which will go into operation as soon as necessary enabling legislation has been passed. In North and South Dakota and in Minnesota similar action is under discussion for the near future.

### Michigan's Experience Described

The first-hand report of experience with the Michigan Medical Service, made by Dr. L. Fernald Foster, secretary of the Michigan State Medical Society, was of absorbing interest, for that reason, to medical association officials from the conference states. Because Michigan Medical Service pioneered in the field and because it is now one of the largest medically sponsored services in the country, Dr. Foster's report is briefly summarized here.

"We felt in Michigan," Dr. Foster said, "That it was time for medicine to be *for* something, instead of *opposed* to every measure advanced by anybody for easing payment of medical expense."

"We had been studying the situation in Michigan since 1925 and we had invested a total of \$20,000 in our surveys. Our first plan was not initiated, however, until passage of two enabling acts, one for group hospital and the other for group medical service in 1939. Our group hospitalization plan was the fifty-fifth to be organized and is now the second largest in the country. This plan preceded the prepayment medical service plan by one year.

### Early Headaches

"Here are some of the headaches we encountered in our pioneering period, headaches you will be spared because you can profit by our experience. For instance, we tried to provide full coverage at first. We found, however, that full coverage meant provision for a total of no less than 9,000 different services performed by doctors of medicine. We found, also, that the volume of service demanded under a prepaid plan is four and one-half times greater than the volume under fee service. Furthermore, people actually do not want full coverage, nor do they want nursing or dental coverage. Under our full coverage plan we attracted subscribers almost overnight; but we lost a total of about \$131,000 before we learned that we must limit our coverage to surgery in the hospital, at least at the start.

"We learned, also, that there is an inevitable 'seasoning' process following enrollment, even under our surgical contract. With each new group of subscribers there is an abnormal demand for tonsillectomies and gynecological procedures. This abnormal demand hits a peak and then levels off in about a year. But the peaks, in the case of each group, go beyond the subscription rates and must be anticipated and provided for.

"We had difficulty with some of the doctors of the state, though objectors were in the minority. Only three rebel counties, out of our 55 county medical societies refused to participate at the start, though most of the individual members in those counties are accepting cases, now.

"We found, also, that we needed an experienced insurance man as our executive and we have such a man now.

"One year ago we were \$500,000 in the red, though

this indebtedness did not represent loss of capital stock. It represented unpaid bills of doctors who had contributed services under the plan. We also owed the Michigan State Medical Society \$17,500 which had been loaned to help organize the service.

"Today we are out of the red; we have paid back the loan from the state medical society in full and we have 725,000 subscribers. New subscribers are enrolling at the rate of 15,000 a month and our reserves are piling up. We plan new benefits as soon as our reserves have increased sufficiently to make them possible. First, we plan to provide medical as well as surgical service in the hospital. Second, we plan to extend our service to the self-employed and to farmers and other unorganized groups. About 83 cents out of every dollar goes back in services or indemnities to our subscribers.

### One Deduction

"Now as to details of operation. Michigan Hospital Service, Michigan's Blue Cross organization, handles enrollments and collections in the interest of business efficiency and because employers object to making two deductions for the two services. Two-thirds of the governing board of Michigan Medical Service consists of doctors. The other third is made up of representatives of labor, of employers and employees and of farm groups. It is not true, as has been alleged, that the CIO is operating our plan. The CIO does provide its own liaison committee, however, on a full-time basis, to aid its subscriber-members in their relations with both the medical and hospital services.

"We provide service for income groups below \$2,000, for single subscribers, and \$2,500 for subscribers and their families. We feel that indemnity insurance fails to meet the needs of the lower income groups. Beyond the limits set, we provide indemnity insurance. The arrangement appears to work well and we have found few cases among patients in the income group between \$2,000 and \$3,000 in which the doctor charged more than the fee established for lower income groups."

### Insurance Corporation Plan Presented

Conference members were interested, also, in remarks by Mr. Don Hawkins, representing the American Health Insurance Corporation. Mr. Hawkins is an expert of long experience in many types of commercial health and accident insurance; and his corporation is now prepared to underwrite indemnity insurance plans organized by medical organizations. These plans will be good anywhere in the United States and will thus meet the requirements of business firms with employees in more than one state. Furthermore, they will not entail the necessity of securing enabling legislation. The object is to help do the job where no plans are in operation or under consideration now. The company does not desire, under any circumstances, to compete with other plans.

A significant and interesting tribute was paid

by Mr. Hawkins to the Blue Cross for its accomplishments in the hospital insurance field. Commercial insurance companies got together twenty-five years ago, he said and decided that the job of providing low-cost hospital insurance could not be done by insurance. It took the Blue Cross which now has 17,000,000 subscribers to show that they were wrong and that it could be done. The same companies now have 5,000,000 subscribers of their own for comparable hospital insurance contracts and they have received more business in this type of insurance in the last two years than ever before. This business is a direct result of the pioneering of the Blue Cross.

### Medical Participation Needed

It is Mr. Hawkins' belief, in the case of medical insurance, also, that the pioneering must be done by the medical associations, even though insurance companies like his own may undertake to underwrite the plans. If the entire effort is left to the insurance companies, costs are likely to be higher, he declared, and they may increase to a point where policies cannot be sold. Furthermore, the commercial companies cannot be expected to extend coverage to dependents of subscribers, nor to employed groups of less than fifty.

Regardless of the type of plan chosen, it was Mr. Hawkins' advice to medical organizations to start on a limited basis. "You must learn to walk before you can run," he pointed out. He expressed the opinion, also, that straight indemnity insurance might well be satisfactory for a start, even in the lowest income groups, because the public is already well accustomed to the indemnity principle.

### Iowa Plan

The Iowa plan, now in process of organization, provides for service, instead of indemnity, to income groups up to \$2,000 for unmarried subscribers and \$2,500, as in Michigan, for married subscribers with dependents. The reason for that is, according to Dr. R. D. Bernard, president-elect of the state society, because the average man in the low income group wants complete protection and because it is certain that the government will propose service, not indemnities. The Iowa plan differs from the Michigan plan in that it offers medical as well as surgical and obstetrical service in the hospital; but the medical service is limited to twenty-one days and the first three days of illness are not covered. The plan is underwritten

by the Bankers' Life Insurance Company of Des Moines. It is governed by a board made up of one doctor from each district in the state, plus four others appointed from the state at large and four representative laymen. Enrollment and collections will be handled by the Blue Cross, as in Michigan. The plan may be expected to go into operation next April, Dr. Bernard said, provided the Legislature passes the necessary enabling act in the meantime and the insurance commissioner approves.

### Council Objectives

Extension of voluntary prepayment plans for medical services such as these has been announced publicly as one of the objectives of the new Council on Medical Service and Public Relations of the American Medical Association, Dr. Joseph S. Lawrence, director of the Washington Bureau, told the conference. The statement of policy embodied also an appeal for consolidation of all health activities of the federal government in one cabinet department, likewise the extension of organized public health units to all sections of the United States and improvements in the handling of medical care for the indigent and unemployed. The statement met with a surprising amount of enthusiasm and interest in Washington, Dr. Lawrence said, and he has hopes that a bill will be introduced in Congress this year calling for enactment of the legislative aspects of this program.

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### FORTUNE LOOKS AT MEDICINE

U. S. Medicine took first place, even over the war and European diplomacy, in the editorial columns of many widely read publications in December, among them *Time*, the *Saturday Evening Post* and *Fortune*.

Undoubtedly exceptions may be taken to these editorial observations. But this stirring of editorial interest is evidence that possibilities for change in our traditional methods of delivering medical service constitute a live issue in America, today, an issue which must be reckoned with, in medical policies and plans.

Attention of medical men should be called, particularly, to the extensive article entitled "U. S. Medicine in Transition" which appeared in the December issue of *Fortune*. According to this article, medicine is definitely a social problem, like food, shelter and jobs, "because the conscience of the people has made it so." Further-

more, American health and the general condition of its medical services are nothing to cheer about, in spite of great advances, here and there. There are too many gaps and inadequacies, due, mostly, to the rapid development of auxiliary and specialized branches and the unequal distribution of doctors and hospitals. Many gaps could be closed, *Fortune* believes, by more general establishment of group practice, as opposed to practice by the individual doctor who does not have economical access to consultation, diagnostic facilities and even, sometimes, to hospitals.

### AMA Complacent

To the American Medical Association, *Fortune's* observer gives credit for magnificent accomplishments in raising ethical and educational standards; but he finds the association in recent years complacently dedicated to perpetuation of the traditional as its ideal. New structural forms and new economic procedures, such as medical insurance, have only been tolerated after they have become firmly established against its opposition.

"Whenever the AMA has initiated change in economic procedure," *Fortune* says, "it has seemed to do so only in the hope of heading off still greater changes."

On the other hand, many localized experiments in prepayment plans by industries, co-operative groups, and latterly, by medical societies are described in detail. Some of these are thumping successes, some quick failures; but they seem to indicate to this writer that voluntary action may succeed, just possibly, in keeping the government from stepping in, providing doctors and others concerned set to work quickly and resolutely.

### Social Inventiveness Needed

"No complicated, flexible, voluntary compromise between the status quo and state medicine will have a reasonable chance of growing to meet all unmet medical needs except under two general conditions," to quote his estimate of the situation. "The first is that the country be prosperous with reasonably full employment so that the bulk of the people are able to pay their own contributions without government help. Second, that the government, at all levels, employers, the great mass of potential patients and, above all, the medical profession, must show a degree of social inventiveness and a determination, hitherto unknown.

If either of these two conditions is absent, the United States is probably headed through a spotty and unsatisfactory experience with voluntary medical insurance toward compulsory, nationwide insurance. The responsibility of the doctors takes the form of a dilem-

ma which they must face: if they do not themselves aggressively foster and encourage considerable reform in medical economics, they are likely to find themselves swept into something that will seem revolutionary by comparison. By one means or another, medical security is undoubtedly coming. The consumers are making a social issue of it and it will, before long, be met, socially."

### Responsibility of Doctors

The charges of complacency and stand-patism launched upon the AMA in this article probably can be refuted; but the gravity of the responsibility confronting the doctors, even thus glibly stated, probably cannot. The writer underestimates the new currents of thought and action now stirring state and sectional components of the organization, however, and the new Council on Medical Service and Public Relations, set up as direct result of this sectional and state activity. The vigor of this activity was evident in the discussions which took place at the North Central Conference in Saint Paul. It gives a more hopeful promise than *Fortune* envisioned for a successful issue in the contest between voluntary action and government compulsion in the field of medical service.

### WORD OF APPRECIATION\*

The Minnesota State Medical Association demonstrated a splendid spirit of co-operation with the dental profession when it adopted a resolution at its annual meeting in Rochester endorsing the Navy bill H.R. 4216 which has for its objective the creation of a separate department for the Dental Corps of the Navy. This action indicates Minnesota medicine believes in the profession of dentistry and respects its ability and desire to administer its own corps in the military services.

The Legislative Committee of the American Dental Association found this resolution extremely valuable in its efforts to secure favorable recognition of the bill. Its publication immediately attracted widespread attention even amongst congressmen, for the opinion prevailed that medical men would be reticent about endorsing the objectives of the bill. At the hearing before the Naval Affairs Committee of the House of Representatives the Honorable Congressman Maas introduced the resolution into the records to substantiate his statement that the entire medical profession of our state endorsed the bill.

The Minnesota State Medical Association did a unique and courageous act in adopting the resolution, but in so doing they demonstrated not only to our professions but to legislators and military administrators as well, that, in Minnesota, medicine and dentistry are in complete accord.

It was with considerable pride that the State Dental Association announced the adoption of this resolution. The many complimentary comments which have come to us in praise of the medical profession of our state for their interest, understanding and generosity towards the problems of dentistry should warm the hearts of those who were instrumental in creating the resolution.

The position of the Minnesota State Medical and Dental Associations has been greatly enhanced throughout our nation by this action. Minnesota dentists are grateful and wish to express through NORTH-WEST DENTISTRY this word of appreciation to Medicine.

CARL O. FLAGSTAD

### MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

**Julian F. Dubois, M.D., Secretary**

#### Saint Paul Physician's License Suspended for Three Years

*In the Matter of the Revocation of the License of Milton C. Wolf, M.D.*

On November 10, 1944, following a hearing, the Minnesota State Board of Medical Examiners suspended, for a period of three years, the license to practice medicine formerly held by Milton C. Wolf, M.D. Dr. Wolf, for many years, was associated with the Heidelberg Medical Institute at 195 E. 7th Street, Saint Paul. In recent years the place has been known as the Mid-West Clinic.

Dr. Wolf's license was suspended following a complaint that he had obtained \$74.00 in advance, from a twenty-six-year-old male patient who had gone to Dr. Wolf complaining of pain in the lower part of his back. The patient testified at a hearing before the Minnesota State Board of Medical Examiners, that he was questioned, at length, by an unlicensed associate of Dr. Wolf's in reference to sexual matters and lost manhood, notwithstanding the fact that the patient stated that he had been employed for four and one-half years in a foundry and had injured his back. The patient further testified that he was advised the usual charge was \$150 as a down payment and \$5.00 per week for treatments, but in his case the charge would be only \$100 plus the charge for weekly treatments, and a guarantee "that he would be a man again." During the investigation by Mr. Brist on behalf of the Minnesota State Board of Medical Examiners, the money was returned to the patient.

Dr. Wolf was born in Chicago in 1876, and graduated from the Medical School of Physicians and Surgeons of Chicago, in 1898. He was licensed in Minnesota in 1905 by examination. Dr. Wolf previously had been warned by the State Board of Medical Examiners with respect to his practice at the Heidelberg Medical Institute and the Mid-West Clinic.

### Ousted Chiropractor Returned to Minneapolis Workhouse

*Re State of Minnesota vs. Michael J. Koehler*

On November 28, 1944, Judge Levi M. Hall of the Hennepin county district court signed an order returning Michael J. Koehler, forty-seven years of age, 321 Kresge Building, Minneapolis, to the Minneapolis workhouse to serve ten and one-half months remaining of a one-year sentence imposed July 6 for criminal abortion. Koehler had been released from the workhouse October 20 after serving only forty-two days of his one-year sentence on his lawyer's claim that Koehler was suffering from diabetes and chronic bronchitis and had to be under the care of his private physician.

Koehler was prosecuted after a joint investigation by the Women's Bureau of the Minneapolis Police Department and the Minnesota State Board of Medical Examiners in May, 1944. The investigation disclosed that Koehler was in the abortion racket. Koehler pleaded guilty July 6 but received two stays of sentence until

\*From the October issue of *North-West Dentistry* published quarterly by the Minnesota State Dental Association.

September 7. The facts in Koehler's case were reported by the Minnesota State Board of Medical Examiners to the State Board of Chiropractic Examiners with the result that on September 6 Koehler's chiropractic license was revoked.

Koehler has a previous criminal record, having pleaded guilty May 24, 1939, in the district court of Hennepin County to a charge of having in his possession instruments, articles and medicine for the causing of unlawful abortion. At that time he paid a fine of \$150 and was also given a one-year suspended sentence in the workhouse.

In the present case the Women's Bureau of the Minneapolis Police Department discovered that seventeen days after getting out of the workhouse Koehler was examining a woman patient at his old stand in the Kresge Building, and offering to do another criminal abortion for \$200. The matter was taken up with Michael J. Dillon, county attorney who asked Judge Hall to return Koehler to the workhouse.

#### Duluth Woman Sentenced to Two-Year Term for Abortion

*Re State of Minnesota vs. Laura Weckler, also known as Laura McLean*

On December 12, 1944, Laura Weckler, also known as Laura McLean, sixty years of age, was sentenced by the Hon. Mark Nolan, Judge of the District Court at Duluth, to a term of two years in the Women's Reformatory at Shakopee. The defendant was arrested on September 29, 1944, at her home on the old North Shore Road a few miles out from Duluth, charged with the crime of abortion, following a joint investigation by the sheriff of St. Louis County, and the Minnesota State Board of Medical Examiners. Upon being arraigned in the Duluth Municipal Court, the defendant waived a preliminary hearing and was held to the District Court under bail of \$1500, which she did not furnish. After being in the County Jail for two months, Mrs. Weckler entered a plea of guilty on November 29, and the Court continued the matter to December 11, to permit a thorough medical examination of the defendant. On December 12, sentence was imposed by the Court.

The defendant stated she was born at Tuscola, Michigan, and had lived in Duluth for over twenty-five years. The defendant has a previous criminal record, having been sentenced at Duluth on October 9, 1941, to a term of fifteen months in the Women's Reformatory at Shakopee, for the crime of abortion. In 1929, the defendant was twice convicted at Duluth, of violating the liquor laws, paying a \$100 fine on one occasion, and being sentenced to sixty days in jail for a second violation. At the time of her last arrest the defendant was found to be in possession of various instruments used in the performing of abortions, including catheters and elm stick. A patient was also found at the defendant's place who, upon being questioned, admitted that she had gone there for the purpose of arranging for a criminal abortion.

#### Minneapolis Woman Sentenced to Two-Year Term for Illegal Possession of Morphine

*Re State of Minnesota vs. Florence B. Brooks*

On December 14, 1944, Florence B. Brooks, thirty-seven years of age, 1819 Bryant Avenue North, Minneapolis, entered a plea of guilty in the District Court of Hennepin County, to an information charging her with the crime of illegally possessing narcotic drugs. The defendant was sentenced by the Hon. Paul S. Carroll, Judge of the District Court, to a term of two years in the Women's Reformatory at Shakopee, the sentence being stayed for a period of three years upon condi-

tion that the defendant enter Minneapolis General Hospital for treatment for her drug addiction and that she remain there until discharged, as cured, and that she thereafter abide by the rules and regulations of the Probation Officer of Hennepin County. The County Attorney's Office and a representative of the Minnesota State Board of Medical Examiners concurred in this disposition of the case.

The defendant was arrested on November 4, 1944, by agents of the Federal Bureau of Narcotics as she was leaving the office of a Minneapolis physician, who had furnished her with sixty  $\frac{1}{4}$  grain morphine sulphate hypodermic tablets and twenty-five  $\frac{1}{2}$  grain morphine sulphate hypodermic tablets for \$5.00. When questioned the defendant denied that she had any narcotic drugs on her person, but upon being taken to the women's quarters of the Minneapolis City Jail where she was searched, it was discovered that she had the above tablets concealed on her person.

The physician in question in this case was warned in January, 1943, by the Supervisor of the Federal Bureau of Narcotics in Minneapolis, and a representative of the State Board of Medical Examiners, to refrain from furnishing this defendant with any morphine or any of the derivatives of opium under any circumstances whatsoever. That warning was given when it was discovered that the same physician had furnished the defendant with forty-nine prescriptions calling for a total of 1800  $\frac{1}{2}$  grain morphine sulphate hypodermic tablets in a period of four months from September 10, 1942, to January 11, 1943; a total of 900 full grains, or approximately 225 full grains per month, or  $7\frac{1}{2}$  full grains per day. Notwithstanding the physician's agreement not to furnish any of the derivatives of opium to this defendant, it was discovered that not long thereafter Florence Brooks was obtaining morphine and dilaudid from this physician, who was now dispensing it to her rather than writing prescriptions for it.

Florence Brooks, who has also been known by the name of Halpern, previously pleaded guilty on April 5, 1940, in the Municipal Court of Minneapolis to a charge of violating the City Drug Ordinance in the obtaining of paregoric. At that time she was sentenced to ninety days in the Minneapolis Workhouse; the sentence was stayed for three days and the defendant placed on probation for 1 year. The very next day the defendant was again arrested by Federal Narcotic Agents and on April 9, 1940, was sentenced to thirty days in the Minneapolis Workhouse in addition to the previous ninety-day sentence. The Minnesota State Board of Medical Examiners has ordered the issuance of a citation for the physician in this case to show cause why his license should not be revoked. The matter will be heard at the next meeting of the Medical Board.

#### South Saint Paul Osteopath Sentenced to One-Year Term in County Jail

*Re State of Minnesota vs. Paul A. Reilly*

On December 16, 1944, Paul A. Reilly, forty-nine years of age, was sentenced in the District Court at Hastings, Minnesota, to a term of one year in the Dakota County Jail. Reilly, a former licensed osteopath in South Saint Paul, had pleaded guilty on May 20, 1944, to an information charging him with the crime of abortion. At the time of entering his plea of guilty, Reilly surrendered in Court his basic science certificate and his osteopathic license, for cancellation. Both have since been cancelled by the respective Boards.

Judge W. A. Schultz, upon recommendation of Mr. Vance B. Grannis, County Attorney of Dakota County, and Mr. Brist, attorney for the State Board of Medical Examiners, sentenced the defendant to a term of one year in the Dakota County jail and placed the defendant on probation for a like period of time after the Court was informed that the defendant had closed his office, and his licenses were permanently revoked.

# MEDICAL ECONOMICS

## MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

Julian F. DuBois, M.D., Secretary

Physicians Licensed November 10, 1944

Special August Examination  
(August 29, 30, 31, 1944)

- AHRENS, CURTIS FRANK, U. of Minn., M.B. 1944, Minneapolis Gen. Hospital, Minneapolis 15, Minn.
- AMATUZIO, DONALD STANLEY, U. of Minn., M.B. 1944, 120 N. 57th Ave. W., Duluth, Minn.
- ANDERSON, CHESTER ALBERT, U. of Minn., M.B. 1944, 2008 Grand Ave., Saint Paul 5, Minn.
- ANDERSON, WERNER WILLARD, U. of Minn., M.B. 1944, 1115 Pine St. S. E., Brainerd, Minn.
- BARRON, SHOLOM STEVEN, U. of Minn., M.B. 1944, 1733 Pinehurst Ave., Saint Paul 5, Minn.
- BENSON, ELLIS STARBRANCH, U. of Minn., M.B. 1944, Cincinnati Gen. Hospital, Cincinnati, Ohio
- BERNSTEIN, WILLIAM G., U. of Minn., M.B. 1944, Fresno County Hospital, Fresno, Cal.
- BOURGET, GERALD EDWARD, U. of Minn., M.B. 1944, Western Pa. Hospital, Pittsburgh, Pa.
- BOYNTON, BRUCE, U. of Minn., M.B. 1944, St. Mary's Hospital, Duluth, Minn.
- BROTHNER, LEONARD ALEXANDER, U. of Minn., M.B. 1944, Cedars of Lebanon Hospital, Los Angeles, Cal.
- BURKE, EDMUND CHARLES, U. of Minn., M.B. 1944, Mpls. Gen. Hospital, Minneapolis 15, Minn.
- BURMEISTER, RICHARD OTTO, U. of Minn., M.B. 1944, Ellis Hospital, Schenectady, N. Y.
- BURNS, CRAIG ALDEN, U. of Minn., M.B. 1944, Presbyterian Hospital, Denver, Colo.
- CHALGREN, WILLIAM SCHLUTZ, U. of Minn., M.B. 1943; M.D. 1943, 2024 Commonwealth Ave., Saint Paul, Minn.
- CHRISTOFFERSON, LEE ALLEN, U. of Minn., M.B. 1944, Cleveland Clinic Foundation Hospital, Cleveland, Ohio
- COE, JOHN IRA, U. of Minn., M.B. 1944, 916 Delaware St. S.E., Minneapolis, Minn.
- COLE, RICHARD LEMUEL, U. of Minn., M.B. 1944, Youngstown Hosp. Assoc., Youngstown, Ohio
- DALY, DAVID DE ROUEN, U. of Minn., M.B. 1944, 1959 Summit Ave., Saint Paul 5, Minn.
- DARLING, ALICE LOUISE, U. of Minn., M.B. 1944, Marshall, Minn.
- DOWELL, MARGARET, U. of Minn., M.B. 1944, Research & Educational Hospital, Chicago, Ill.
- EDER, WALTER PHILLIP, U. of Minn., M.B. 1944, 3006 W. 44th St., Minneapolis 10, Minn.
- ERICKSON, LAURENCE FREDRICK, U. of Minn., M.B. 1944, 4915 10th Ave. S., Minneapolis, Minn.
- EVERT, ROBERT NASH, U. of Minn., M.B. 1944, Mercy Hospital, Pittsburgh, Pa.
- GEHRIG, LEO JOSEPH, U. of Minn., M.B. 1944, Salt Lake Co. Gen. Hosp., Salt Lake City, Utah
- GIEBENHAIN, JOHN NICHOLAS, U. of Minn., M.B. 1944, Miller Hospital, Saint Paul, Minn.
- GILLAM, JOHN SLOANE, U. of Minn., M.B. 1944, Mpls. Gen. Hospital, Minneapolis 15, Minn.
- GOLTZ, NEILL FRANCIS, U. of Minn., M.B. 1943, 2259 Summit Ave., Saint Paul 5, Minn.
- HALL, THOMAS NEWTON, U. of Minn., M.B. 1944, 729 2nd Ave. W., Grand Rapids, Minn.
- HANSON, MARK C. L., U. of Minn., M.B. 1944, Boston City Hospital, Boston, Mass.
- HARTMAN, SEYMOUR ARNOLD, U. of Minn., M.B. 1944, Queens Gen. Hospital, Jamaica, L. I., New York
- HASS, FREDERICK MERTON, U. of Minn., M.B. 1944, Miller Hospital, Saint Paul, Minn.
- HAUGEN, GEORGE WILLIAM, U. of Minn., M.B. 1944, 510 Mill St. S., Fergus Falls, Minn.
- HAUSER, ELIZABETH BURCH, U. of Minn., M.B. 1944, Rochester Gen. Hospital, Rochester, New York
- HITCHCOCK, CLAUDE RAYMOND, U. of Minn., M.B. 1944, 3655 47th Ave. S., Minneapolis, Minn.
- HOLLY, ROY GROVES, U. of Minn., M.B. 1943, 518 S. Main St., Waupaca, Wis.
- HOWARD, ROBERT BRUCE, U. of Minn., M.B. 1944, University Hospitals, Minneapolis 14, Minn.
- JENSON, JAMES EDWARD, U. of Minn., M.B. 1944, Minneapolis Gen. Hospital, Minneapolis 15, Minn.
- JOHNSON, RICHARD JOHN, U. of Minn., M.B. 1944, Ancker Hospital, Saint Paul 1, Minn.
- KARLSON, KARL EUGENE, U. of Minn., M.B. 1944, University Hospitals, Minneapolis 15, Minn.
- KINKADE, BYRON R., U. of Minn., M.B. 1944, Baltimore City Hospitals, Baltimore, Maryland
- KOSKELA, ALBERT LEO, U. of Minn., M.B. 1944, Minneapolis Gen. Hospital, Minneapolis 15, Minn.
- KREMIS, ISADORE C., U. of Minn., M.B. 1944, Minneapolis General Hospital, Minneapolis 15, Minn.
- KREZOWSKI, THOMAS KAJETAN, U. of Minn., M.B. 1944, Milwaukee County Hospital, Milwaukee, Wis.
- KUSSKE, BRADLEY WALTER, U. of Minn., M.B. 1944, St. Joseph's Hospital, Saint Paul 2, Minn.
- LARSON, PAUL GIERE, U. of Minn., M.B. 1944, Sacramento Co. Hospital, Sacramento, Cal.
- LAWRASON, FREDRICK DOUGLAS, U. of Minn., M.B. 1944, New Haven Hospital, New Haven, Conn.
- LE BIEN, WAYNE ERNEST, U. of Minn., M.B. 1944, Mpls. Gen. Hospital, Minneapolis 15, Minn.
- LEE, NORMAN JAMES, U. of Minn., M.B. 1944, Ancker Hospital, Saint Paul 1, Minn.
- LINDBLOM, WILLIAM HOWARD, U. of Minn., M.B. 1944, Indianapolis City Hosp., Indianapolis, Ind.
- LINDELL, ROBERT ERWIN, U. of Minn., M.B. 1944, Mpls. Gen. Hospital, Minneapolis 15, Minn.
- LINDSAY, DOUGLAS TWICHELL, U. of Minn., M.B. 1944, University Hospitals, Minneapolis 14, Minn.
- MARTIN, GEORGE RILEY, U. of Minn., M.B. 1944, San Bernardino County Charity Hospital, San Bernardino, Cal.
- McGREW, ELIZABETH ANNE, U. of Minn., M.B. 1944, Milwaukee County Hospital, Milwaukee, Wis.
- MERRICK, ROBERT LYNN, U. of Minn., M.B. 1944, 1500 Chicago Ave., Minneapolis, Minn.
- MILLER, ARDEN LAVERNE, U. of Minn., M.B. 1944, St. Joseph's Hospital, St. Paul 2, Minn.
- MOREN, J. ADELAIDE, U. of Minn., M.B. 1944, Children's Hospital, San Francisco 14, Cal.
- NADEAU, GERALD HUBERT, U. of Minn., M.B. 1944, Peoples Hospital, Akron, Ohio.
- NELSON, PAUL ROGER, U. of Minn., M.B. 1943, Cleveland City Hospital, Cleveland, Ohio
- NORDLAND, MARTIN ALBERT, U. of Minn., M.B. 1944, Northwestern Hospital, Minneapolis 7, Minn.
- NORLEY, THEODORE Hahnemann (Pa.), M.D. 1943, Mayo Clinic, Rochester, Minn.
- O'PHELAN, EDWARD HARVEY, U. of Minn., M.B. 1944, Fordham Hospital, New York, New York
- PALLISTER, PHILIP DAVID, U. of Minn., M.B. 1944, Children's Hosp. Society, Los Angeles, Cal.
- PEARSON, ROY THORWALD, U. of Minn., M.B. 1944, c/o B. F. Pearson, M.D., Shakopee, Minn.
- PELTIER, LEONARD FRANCIS, U. of Minn., M.B. 1944, University Hospitals, Minneapolis 14, Minn.
- PERRY, JOHN WILLIAM, U. of Minn., M.B. 1944, The Hospital of the Good Samaritan, Los Angeles, Cal.
- PETERSEN, DONALD HARRY, U. of Minn., M.B. 1944, West Suburban Hospital, Oak Park, Ill.
- PETERSON, KENNETH HAROLD, U. of Minn., M.B. 1944, Bethesda Hospital, St. Paul 1, Minn.
- PLATTES, GORDON JOHN, U. of Minn., M.B. 1944, Harper Hospital, Detroit 1, Mich.
- RIEGEL, FRED B., U. of Minn., M.B. 1944, Henry Ford Hospital, Detroit, Mich.

## MEDICAL ECONOMICS

ROBERTSON, JAMES SYDNR, U. of Minn., M.B. 1944, 800 Freeborn St., Austin, Minn.  
 RUKAVINA, JOHN GEORGE, U. of Minn., M.B. 1944, St. Mary's Hospital, Duluth, Minn.  
 RUSTERHOLZ, Alan Paul, U. of Minn., M.B. 1944, West Suburban Hospital, Oak Park, Ill.  
 SATHER, EDGAR LELAND, U. of Minn., M.B. 1944, Harper Hospital, Detroit, Mich.  
 SCHAEFER, JOSEPH ALEXANDER, U. of Minn., M.B. 1944, Detroit Receiving Hospital, Detroit, Mich.  
 SCHMIDT, RICHARD HENRY, U. of Minn., M.B. 1944, Milwaukee Co. Hospital, Milwaukee, Wis.  
 SCHROEDER, ALBERT JOHN, U. of Minn., M.B. 1944, 21 Malcolm Ave. S. E., Minneapolis, Minn.  
 SCHULTZ, DONALD OSCAR, U. of Minn., M.B. 1944, Fordham City Hospital, New York, New York  
 SCHUMACHER, JOHN WESLEY, U. of Minn., M.B. 1944, Broadlawns Polk County Hospital, Des Moines, Iowa  
 SEGAL, MARTIN A., U. of Minn., M.B. 1944, Lincoln Hospital, New York, New York  
 SEIFERT, PAUL JOHN, JR., U. of Minn., M.B. 1944, Sacred Heart Hospital, Spokane, Wash.  
 SIMON, DANIEL, U. of Minn., M.B. 1944, 618 5th Ave. S., Virginia, Minn.  
 SOBOLOFF, HYMAN ROBERT, U. of Minn., M.B. 1944, St. Catherine's Hosp., East Chicago, Ind.  
 SOLHAUG, SAMUEL BERNARD, JR., U. of Minn., M.B. 1944, Northwestern Hospital, Minneapolis 7, Minn.  
 STENSGAARD, KERMIT LUTHER, U. of Minn., M.B. 1944, Detroit Receiving Hosp., Detroit, Mich.  
 STONE, HARVEY WILLIAM, U. of Minn., M.B. 1944, University Hospitals, Minneapolis 14, Minn.  
 †STORAASLI, PAUL GERHARD, U. of Minn., M.B. August 24, 1944, Luverne, Minnesota  
 STROEBEL, ROBERT JOHN, U. of Minn., M.B. 1944, Johns Hopkins Hospitals, Baltimore, Maryland  
 SWISHER, SCOTT NEIL, JR., U. of Minn., M.B. 1944, Strong Mem. Hospital, Rochester, N. Y.  
 TAYLOR, DONALD EUGENE, U. of Minn., M.B. 1944, 599 S. Warwick St., St. Paul 5, Minn.  
 TAYLOR, GLORIA ANNE, U. of Minn., M.B. 1944, 599 S. Warwick St., Saint Paul 5, Minn.  
 TORRENS, JOHN KLOPP, U. of Minn., M.B. 1944, West Suburban Hospital, Oak Park, Chicago, Ill.  
 UHRICH, EDWARD CLAUDE, Temple U., M.D., 1943, Mayo Clinic, Rochester, Minn.  
 VON AMERONGEN, FREDERICK KARL, U. of Minn., M.B. 1944, St. Vincent's Hospital, 2131 W. 3rd St., Los Angeles 5, Cal.  
 WALLIN, IRA O., U. of Minn., M.B. 1944, Fresno County Gen. Hosp., Fresno, Cal.  
 WALTER, FREDERICK HAROLD, U. of Minn., M.B. 1944, St. Luke's Hospital, Duluth, Minn.  
 WEBBER, RICHARD JOHN, U. of Minn., M.B. 1941, M.D. 1942, Naval Training School, Univ. of Minnesota, Minneapolis 14, Minn.  
 WESTOVER, DARRELL EUGENE, U. of Minn., M.B. 1944, Minneapolis Gen. Hospital, Minneapolis 15, Minn.  
 WILSON, FRANKLIN CHARLES, U. of Minn., M.B. 1944, Sacred Heart Hospital, Spokane, Wash.  
 WOHLRABE, A. CAROT, U. of Minn., M.B. 1944, Hospital of the Good Samaritan, Los Angeles, Cal.  
 WOLGAMOT, JOHN ROLAND, U. of Minn., M.B. 1944, Norfolk Gen. Hospital, Norfolk, Virginia.  
 WYLIE, ROBERT LEONARD, U. of Minn., M.B. 1944, California Hospital, Los Angeles, Cal.

### By Reciprocity

FRIEND, ARTHUR WILLIAM, Queen's Univ., M.D. 1929, Campus Club, Univ. of Minnesota, Minneapolis 14, Minn.  
 MC LAUGHLIN, BYRON H., U. of Pittsburgh, M.D. '43, 3210 Girard Ave. S., Minneapolis 8, Minn.  
 PAALMAN, RUSSELL JOHN, U. of Mich., M.D. 1938, Mayo Clinic, Rochester, Minn.

†Successful candidate for medical licensure—special examination, August 29, 30, 31, 1944. Killed September 28, 1944, in crash of Chicago and North Western line passenger train near Missouri Valley, Iowa.

WELLS, MARVIN, U. of Wis., M.D. 1942, 1009 Nicollet Ave., Minneapolis 2, Minn.

### Physicians Licensed November 10, 1944 October Examination

ALDRICH, CHARLES ANDERSON, Northwestern, M.D. 1915, Mayo Clinic, Rochester, Minn.  
 BAKER, HOWARD ALLEN, Wayne Univ., M.D. 1943, Grace Hospital, Detroit, Mich.  
 BOLZ, JOHN ARNOLD, U. of Chicago, M.D. 1943, Crane Lake, Minn.  
 BRENNER, HYMIE HENRY, U. of Wis., M.D. 1943, Minneapolis Gen. Hospital, Minneapolis 15, Minn.  
 BROWNING, WILLIAM HAYNER, U. of Kans., M.D. 1943, Mayo Clinic, Rochester, Minn.  
 CANFIELD, ALBERT, U. of Minn., M.B. 1942, M.D. 1943, Minneapolis Gen. Hospital, Minneapolis 15, Minn.  
 COSTIN, MAURICE EDWARD, Harvard U., M.D. 1942, Mayo Clinic, Rochester, Minn.  
 COX, WALTER BEDFORD, U. of Chicago, M.D. 1943, Mayo clinic, Rochester, Minn.  
 DILLE, RODGER SWAIN, Northwestern U., M.B. 1938, M.D. 1939, Mayo Clinic, Rochester, Minn.  
 FLETCHER, MARY ELIZABETH HERBERICH, Syracuse U., M.D. 1941, Mayo Clinic, Rochester, Minn.  
 FRYFOGLE, JAMES D., Wayne U., M.D. 1943, Mayo Clinic Rochester, Minn.  
 GIBSON, ROBERT HALE, U. of Oregon, M.D. 1943, Mayo Clinic, Rochester, Minn.  
 HAYS, JOHN COLLINS, U. of Minn., M.B. 1943, Minneapolis Gen. Hospital, Minneapolis 15, Minn.  
 HOLMES, CARL A., Northwestern U., M.B. 1943, M.D. 1944, Mayo Clinic, Rochester, Minn.  
 HORAN, MICHAEL JOSEPH, JR., N. Y. Med. Col., M.D. 1942, Mayo Clinic, Rochester, Minn.  
 MARTENS, THEODORE GLENN, U. of Rochester, M.D. 1943, Mayo Clinic, Rochester, Minn.  
 MAYNARD, MASON SHERWOOD, U. of Mich., M.D. 1941, Mayo Clinic, Rochester, Minn.  
 MYERS, THOMAS TWIDWELL, U. of Chicago, Rush Med. Col., M.D. 1935, Mayo Clinic, Rochester, Minn.  
 NEIBLING, HAROLD ALDEN, Northwestern Univ., M.B. 1943, M.D. 1944, Mayo Clinic, Rochester, Minn.  
 NICKELL, DAVID FRANCIS, U. of Louisville, M.D. 1941, Mayo Clinic, Rochester, Minn.  
 NORVAL, MILDRED ARDELL, U. of Ill., M.D. 1941, Mayo Clinic, Rochester, Minn.  
 PUGH, PHILLIP FRANCE HOWARD, Temple U., M.D. 1943, Mayo Clinic, Rochester, Minn.  
 VIGRAN, IRWIN MYRON, U. of Cincinnati, M.D. 1943, Mayo Clinic, Rochester, Minn.  
 WEHNER, MERLE ERNEST, Coll. of Med. Evang., M.D. 1944, 318½ W. Saginaw, Lansing, Mich.  
 WEIR, JAMES ROBERT, U. of Ill., M.D. 1943, 240 Emerald St. S. E., Minneapolis 5, Minn.  
 ZASLOW, JERRY, Temple U., M.D. 1940, Mayo Clinic, Rochester, Minn.

### By Reciprocity

CRABTREE, JAMES CURTIS, JR., Tulane U., M.D. 1943, N.P.B.A. Hospital, 1515 Charles St., Saint Paul 4, Minn.  
 FRANK, WALTER LESLIE, JR., St. Louis U., M.D. 1941, 3603 Aldrich Ave. S., Minneapolis 12, Minn.  
 McCARTHY, HARRY HUNTLEY, Creighton U., M.D. 1937, Mayo Clinic, Rochester, Minn.  
 MOODY, FRANK SIMS, Harvard University, M.D. 1940, 707 Thorpe Bldg., 523 Marquette, Minneapolis 2, Minn.  
 SCHWARZE, CYRIL ARTHUR, U. of Wis., M.D. 1938, Gopher Ordnance Works, Rosemount, Minn.

### National Board Credentials

BILLETER, OSCAR ARNOLD, U. of Chicago, M.D. 1939, 950 Med. Arts Bldg., Minneapolis 2, Minn.  
 FARBER, EUGENE MARK, U. of Buffalo, M.D. 1943, Mayo Clinic, Rochester, Minn.  
 WATIA, VIENO TUULIKKI, U. of Mich., M.D. 1933, 508 Quincy St., Hancock, Mich.

# Minneapolis Surgical Society

Meeting of October 5, 1944

The President, Daniel MacDonald, M.D., in the Chair

## SCALENUS ANICUS SYNDROME

### Abstract

ARTHUR F. BRATRUD, M.D.  
Minneapolis, Minnesota

One of the most common causes of disability of the upper extremities, where pain, motor and vascular disturbances are present, is the scalenus anticus syndrome. It is not recognized nearly as frequently as it should be, but with the increasing knowledge of this syndrome as a clinical entity, diagnosis of it should not be difficult.

Symptoms may be present from a period of a few weeks to a number of years. The most frequent symptoms are: pain in the region of the shoulder which may radiate down the arm, forearm and to the hand, or posteriorly to the region of the scapula or anteriorly to the region of the chest.

Vascular and vasomotor disturbances may be associated with pain. These consist of edema and cyanosis and may even lead to gangrene in the peripheral distribution of the vessels as a result of obstructed flow of blood to the part.

Motor and sensory disturbances may be associated and reach the stage where it causes incapacitation of the individual.

Various names have been given to the syndrome. Naffsiger limits the scalenus syndrome to individuals suffering from brachial neuritis. Cervico-brachial syndrome does not define the disease, but it does give a comprehensive and anatomic concept which is accurate and inclusive. Under this heading the syndrome may be classified under three general headings.

1. Individuals exhibiting neurologic symptoms.
2. Those with vascular symptoms.
3. Those who exhibit a combination of neurologic and vascular symptoms. This latter has been termed neuro-circulatory-compression syndrome by some men. This aptly describes the underlying pathological anatomy. Every sufferer manifests symptoms which are characteristic of the causative factor. The pathologic reaction in the anatomic tissues to either intermittent or long-continued compression will result in symptoms peculiar to their function. In the nerve this results in pain, numbness, paresthesia, paralysis and loss of function. In the vascular structures, it results in pain and vascular symptoms: edema, swelling, cyanosis and even gangrene in the peripheral distribution, as a result of obstructed flow of blood to the part. Anatomy of the region is described as well as the surgical treatment for relief—where such form of treatment is required.

In the differential diagnosis the following conditions must be considered and discussed: neurosis, arthritis,

tumor of the lungs, supraspinatus tear and injury to the long head of the biceps muscle.

The syndrome is of particular interest, for a very large percentage of cases follow injury or trauma to the shoulder. Numerous instances have been reported in obstetrical cases and also following surgery where the patient has been placed in an exaggerated Trendelenburg position.

It is not necessary that cervical ribs be present to produce the typical picture and it is very seldom the excision of the rib is indicated where surgery is necessary. Section of the scalenus anticus muscle gives relief in nearly all cases and the improvement or results are usually very rapid, being noticed within twenty-four hours in some cases.

Seven patients with the syndrome were submitted to surgery, one having had both sides operated upon. The duration of symptoms varied from a period of a few months to ten years. The results were good in all cases except one and this patient had marked relief of pain in the extremity, but still complained after two years of some pain in the region of the shoulder.

### Discussion

DR. MARTIN NORDLAND: I enjoyed listening to Doctor Bratrud's excellent presentation of this subject. He has covered the subject very well. I should like only to add a few practical points. Patients with this disturbance are not rare, but they occur seldom enough in the average surgeon's experience so that they are not readily recognized. It has been stated that they occur in about 1 per cent of all patients who come for examination. It has further been noted that about 70 per cent of individuals with this disturbance have bilateral affliction. It seems that women have the disturbance in proportion of three to one as compared to men, and it has been found to occur in the second, third, and fourth decades. Probably because of the lack of muscular tone in women approaching the fortieth year, this disturbance is found more often in women. It has been noted that when the disturbance is single that it occurs more often on the right side than on the left side. This probably is explained by the fact that more people are right handed, and therefore the increased activity of this member over the left, aggravates the symptoms. This would also explain the fact that the symptoms are more prominent late in the day. Anatomically it has been noted that the nerves are closer to the ribs on the right side, and that the subclavian artery is higher on the right. While this disturbance may be relatively congenital in its origin, it is reasonable to presume that nerve compression is better borne in the earlier periods of life.

The size of the rib is not important. A fibrous band is many times the cause of compression on the brachial plexus and on the subclavian artery. The symptoms are due to pressure on the lowest cord of the brachial plexus. The symptoms should suggest the lesion. In the more severe cases the hand becomes blue. Pressure on the blood supply would explain this. Both the motor and sensory nerves are affected. Numbness is present,

## MINNEAPOLIS SURGICAL SOCIETY

and in the untreated cases, atrophy occasionally develops. Many patients find from experience that they are much more comfortable sitting in the arm chair; any mechanical support which elevates the arm gives relief.

The diagnosis of scalenus anticus syndrome should be considered when the symptoms which I have related are present. Pain is not necessarily present, but usually is. With motor and sensory disturbances, numbness, and atrophy, the diagnosis should be quite plain, even without x-ray. Naturally the presence of these symptoms with a corroboratory evidence of the x-ray, the diagnosis should not be difficult. A very good aid in diagnosis in the early stages is to ask the patient to raise the arm above the head. The pulse, which is normally present when the hand is down, disappears or becomes quite weak when the hand is elevated above the head. Since the section of the scalenus anticus muscle was instituted by Adson, the treatment has become relatively simple. There should be practically no complications in the surgical treatment of this disturbance. I must, however, mention the complications which occurred in my own experience in dealing with this disturbance. In one case I accidentally nicked the subclavian artery. Those of you who know what it means to expose the subclavian artery for this operation will realize what would happen under such circumstances. The wound filled rapidly with frothy blood, and I was considerably concerned for some moments. Repair was made and the patient made a good recovery. In another patient with bilateral symptoms, the pleura of the apex of each lung was accidentally torn. As each apex was injured, the patient suddenly became cyanosed. Anesthesia with a gas mask renders this relatively safe, however. The pleura was repaired on each side and the patient made a good recovery. I believe this diagnosis would be made more often if the clinician were more conscious of the possibilities.

DR. WILLIAM P. PEYTON: I would like to say something about terminology. I have regarded scalenus anticus syndrome to be a group of symptoms simulating those produced by a cervical rib but in which there is no cervical rib present. This syndrome is much more rare than are cases with symptoms from a cervical rib. Since January, 1941, we have had on the neurosurgical service at the University Hospital only two cases of scalenus anticus syndrome but in the same period we have had nine cases with similar symptoms in which a cervical rib was demonstrated by roentgenology.

Under this classification I find that the diagnosis of scalenus anticus syndrome may be an extremely difficult diagnosis to make.

It may simulate many conditions, some of which Dr. Bratrud has mentioned but in addition there are others such as progressive muscular atrophy, Guillain-Barre syndrome (encephalo-myelo radiculitis), lateral rupture of a cervical intervertebral disc, spinal cord tumor in the cervical region, or neurofibroma of a cervical nerve.

It is difficult to explain the dilatation of the subclavian artery that is sometimes found lateral to the scalenus anterior muscle. I have considered this as being due to decreased blood flow in the vasa vasorum in this part of the artery but another possible cause is compression of the subclavian artery between the first rib and the clavicle in which case the dilatation is proximal to the point of compression as one would expect.

Similar compression of the subclavian vein between the first rib and the clavicle would explain the venous obstruction occasionally seen in cervical rib or scalenus anticus syndrome. Since the vein runs anterior to the scalenus anterior muscle it cannot be compressed by this muscle.

We observed a boy with bilateral scalenus anticus syndrome. He habitually assumed a slouching position and if he straightened up into good posture an attack was immediately precipitated. In the course of five

minutes after the erect posture was assumed all the veins in his hands would dilate.

There has been a tendency to explain all the vascular disturbances as being due to vasomotor disturbances. If this were true sympathetic nerve block should always eliminate them. Compression of the vessels between the clavicle and the first rib seems to be more probable.

The result following operation as Dr. Bratrud has shown is good.

## THE CRITERIA OF A SATISFACTORY OPERATION FOR ULCER AND CAUSES OF FAILURE AFTER GASTRIC RESECTION FOR ULCER

OWEN H. WANGENSTEEN, M.D.

Minneapolis, Minnesota

The objectives of a satisfactory operation for ulcer are: (1) subjective relief of symptoms; (2) ablation of the ulcer diathesis and prevention of recurrent ulcer; (3) accomplishment of these objectives with minimal risk and without compromising the future for the patient. Such a procedure envisages: (1) extensive gastric (three-quarter) resection; (2) removal of the antrum; (3) removal of the lesser curvature; and (4) completion of the operation by the establishment of a gastrojejunal stoma with a short afferent duodenal loop, the anastomosis being made at or just proximal to the ligament of Treitz. Surgeons who propose to do these operations, in the interests of a low operative mortality must learn: (1) to master the technique of satisfactory duodenal inversion; (2) to effect the anastomosis with a minimal inversion of tissue in order to preserve a large efferent outlet from the stomach as well as a patent afferent inlet to it.

In this clinic, at any rate, the bleeding ulcer appears to be a more serious problem than the perforated ulcer. A policy of operating upon such patients before their condition becomes critical undoubtedly will diminish deaths from hemorrhage. Such operations are trying at best and should be undertaken only by those prepared to deal with the exigencies of a gastric resection under difficult circumstances. Even superficial gastric erosions may provoke serious or even fatal hemorrhage.

### Importance of the Vascular Factor

The importance of local impairment of blood flow to the stomach and duodenum is cited as a likely cause rendering the mucosa more susceptible to injury by the acid-peptic digestive juice. Severe gastric hemorrhage has been observed in a patient with arterial thrombosis of the intramural gastric vessels with calcification. Erosions and ulcers can be produced in the experimental animal by fat embolism; the fat plugs the end vessel in the mucosa which then succumbs to the acid-peptic digestive action of the gastric secretion. Further, ulcers and erosions can be produced also in the

From the Department of Surgery, University of Minnesota Medical School, Minneapolis, Minnesota.

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gastric mucosa of animals by the production of chronic arterial spasm, achieved by implanting pitressin or adrenalin in beeswax.

#### **Recurrent Stomal Ulcer After Resection**

Four patients, who had undergone resection elsewhere, have been seen in this clinic during the past two years. The causes of recurrent stomal ulcer in these patients fall essentially into the following groups, listed in the order of their importance:

1. The most frequent cause is failure to resect enough stomach. In unobstructed stomachs, the usual weight of the resected specimen removed at the time of gastric resection averages about 185 grams. In three of the patients in this group, the weight of the gastric tissue removed at the time of the second resection was approximately that amount, indicating that the extent of the resection at the first operation was inadequate. Inasmuch as it was necessary to remove so much gastric tissue to leave the customary 25 per cent sized gastric pouch, it is not unlikely that the patients had large stomachs occasioned by pyloric obstruction at the time of the first operation.

2. Employing too long an afferent loop in the gastrojejunal anastomosis invites recurrent stomal ulcer. In this laboratory, the validity of the thesis that a short afferent loop is important in thwarting recurrent ulcer after gastric resection has been established. The manner in which the long afferent loop predisposes to recurrent stomal ulcer is that it shunts the secretion from the residual gastric pouch from the richest secretin-bearing area of the bowel, viz.: the duodenum and the upper jejunum. After gastric resection, made at the ligament of Treitz or just proximal to it, the regurgitation of barium into the blind proximal duodenal loop is visualized quite regularly on roentgen examination, suggesting that the opportunity for absorption of secretin from the duodenal mucosa is operating in the normal manner.

3. Failure to excise the antral mucosa completely invites recurrence of gastrojejunal ulcer. In two of these four patients this factor was a contributing cause. That this cause alone may be responsible for recurrent ulcer in patients who have had an otherwise satisfactory gastric resection would appear to have been established. Previously two patients were reported from this clinic who had undergone the three-quarter resection; however, owing to the difficulties presented by an inflammatory mass at the pyloric outlet, the prepyloric antral segment was left; stomal ulcer developed and in one patient, its excision effected a cure; in the other, rerection was carried out after excision of the antral segment with complete relief of symptoms.†

4. Failure to excise the lesser curvature completely may invite recurrent stomal ulcer. The lesser curvature, like the antrum and the first portion of the duodenum, is unrugated and presents a relatively smooth mucosal surface. Such smooth unrugated surfaces are constantly exposed to the acid-peptic digestive action of gastric juice and have far less opportunity to escape

than highly rugated surfaces such as the fundic or corporic mucosa. The capacity of the rugated mucosa to move on the muscularis mucosa is well known; thereby, its folds escape constant submersion beneath the acid-peptic digestive fluid. Furthermore, complete excision of the lesser curvature provides the surgeon with the opportunity to remove a good portion of the vagal influence to the residual gastric pouch, thereby lessening materially psychic stimulation of gastric secretion.

#### **Comment**

In this clinic, we have been unable to produce recurrent stomal ulcer with the provoking stimulus of histamine in beeswax, after the three-quarter gastric resection employing a short afferent duodenal loop. On the contrary, in gastric resections of less than 50 per cent, recurrent ulcer develops quite regularly when such animals are subjected to the stimulating effect of histamine in beeswax.\* Moreover, if a three-quarter resection is performed employing a long afferent loop, recurrent stomal ulcer may develop spontaneously or be provoked by the daily implantation of histamine in beeswax.‡

In this clinic the uniform success of the three-quarter gastric resection in thwarting the recurrent ulcer diathesis in a long list of resection cases, totaling more than 350 patients, suggests that intractable or incurable recurrent ulcer is a myth. Only recently, however, I have had a single recurrence in a man upon whom a gastric resection was done by me in May of this year for a gastrojejunal ulcer following a gastrojejunostomy. The removed segment of stomach together with 6 centimeters of jejunum weighed only 155 grams—probably therefore only about 140 grams after deducting the weight of the 6 centimeters of jejunum. The man was hypersthenic in build and somewhat adipose. In addition, he has been an inveterate smoker, smoking daily between three and four packages of cigarettes. Though nicotine probably has little influence upon gastric secretion, it does influence blood flow in an important manner. It is not unlikely that this man had a situation akin to chronic arterial spasm produced by the continual smoking. He has become so much addicted to nicotine that he has been unable to quit the use of tobacco wholly; nevertheless, his improvement since cutting down materially on cigarette smoking has ameliorated his symptoms considerably with cessation of pain and hemorrhage. If the gastric resection in this instance had been more extensive, the patient probably could have tolerated the chronic arterial spasm provoked by nicotine, and, as was related above, erosions and ulcer may be produced by conditions which provoke spasm.

The occurrence of a recurrent stomal ulcer in this patient suggests the importance of meeting adequately the criterial of a satisfactory operation for ulcer.

#### **Discussion**

DR. L. C. CULLIGAN: I always enjoy hearing Doctor Wangensteen talk. He has a way of presenting his facts in a clear logical manner that is convincing. I

\*Proc. Soc. Exp. Biol. & Med., 56:231, 1944.  
†Bull. Minnesota M. Found., 4:82, (May) 1944.

frequently attend the surgical clinics at the University Hospital and always come away feeling that I have learned something. I was over there this morning watching Doctor Wangensteen resect a gastrojejunal ulcer. I think that we should often take advantage of this excellent opportunity of seeing gastric and other difficult surgery done beautifully.

As the years roll on and we are better able to evaluate in the light of time the work that Doctor Wangensteen and his associates are doing, we will realize that he has made two outstanding contributions to gastric surgery. First, he has placed the operation of resection for ulcer on a physiological basis, and as a result bids fair to do away with the great nemesis of gastric surgeons—gastrojejunal ulcer. Up to the present time one had to be a real optimist to feel that the surgical treatment of ulcer was particularly successful. Before I left the Veterans' Hospital, I made a study of the results of sixteen years of gastric surgery at that institution, estimating our results on how often it was necessary for these patients to return to the hospital for treatment after they had been operated upon. Sixty-six per cent of the pyloroplasties returned for further treatment. Thirty-eight per cent of our gastroenterostomies returned with gastric symptoms. Sixteen and eight-tenths per cent of seventy-three resections returned with gastrojejunal ulcer, hemorrhages or other symptoms. Five of these resections, earlier ones which were done between the years 1927 and 1931, all or 100 per cent returned with symptoms. In contrast with these results, twenty patients who had a resection for gastric ulcer were apparently cured for none of these returned for treatment. This makes us feel that our figures are fairly accurate.

I think that our results were comparable to those that surgeons are getting generally. In 1942, Kiefer, reviewing the results of 173 resections for ulcer done at the Lahey Clinic, reported twenty, or 11 per cent, that subsequently developed gastrojejunal ulcers or severe hemorrhages. In the light of Doctor Wangensteen's insistence that the stoma of the resection be placed as close as possible to the duodenum, using a very short or no loop posterior anastomosis, it is interesting to analyze these twenty cases from the Lahey Clinic. Sixteen of these resections were done by the anterior method which means an anastomosis well down on the jejunum some distance from the duodenum. Three of the resections, where the posterior type of anastomosis was done, were of the Finsterer exclusion type of resection wherein the distal end of the stomach together with the antral mucosa was left. A very high incidence of gastrojejunal ulcer almost invariably follows this procedure unless the antral mucosa is removed at the time. In one case it did not state whether the anastomosis was of the anterior or posterior type.

Doctor Wangensteen now reports 350 carefully-followed resections with only one probable gastrojejunal ulcer. I know that he will be the first to agree that the time element is not sufficiently long to be sure that this good record is going to keep up forever, but certainly it begins to look as though he is on the right track.

The second real contribution that Doctor Wangensteen has made is the development of the aseptic gastric resection. In my opinion this is the most effective means that we have for the prevention of peritonitis following resection, and its use is to be particularly urged in resection for carcinoma.

There are those that contend that the aseptic or closed resection has no place in gastric surgery, and that all postoperative peritonitis is due to postoperative leakage from the suture lines of the anastomosis or from leakage from the duodenal stump. While no one will argue that peritonitis is not caused from leakage from suture lines, inasmuch as peritonitis follows resection for carcinoma many times oftener than resection for ulcer it must follow, if their contention is true, that car-

cinoma resections leak much oftener than do resections for ulcer. This may or may not be true. There may be something about the carcinoma patient that he does not knit as readily as does the ulcer patient. I do not know if there is anyone that has the answer to that. However on the other side of the argument is the well-established fact that the stomach contents of 90 per cent of carcinoma patients are septic, and the stomach contents of 75 per cent of duodenal ulcer patients are sterile. It seems to me that this fact must be given thoughtful consideration as being the chief etiological factor in the development of postoperative peritonitis and is the reason that peritonitis follows resection for carcinoma so much more frequently than it does resection for ulcer. If such is the case, the surgeon using the open method is not giving his patient all the protection that he is entitled to. That sepsis and contamination at the time of surgery is the real factor in the cause of post-operative peritonitis seems to be supported by the fact that in the resections which we have done for carcinoma since we started using the aseptic resection at the Veterans Hospital, we have had no peritonitis and no leakage, and Doctor Wangensteen has done approximately one hundred and fifty resections for carcinoma using the aseptic technique with only one death from peritonitis. This was due to leakage from a duodenal stump.

Last winter I was talking before the St. Paul Surgical Society on the subject of the aseptic resection. In discussing my paper, Doctor Colvin began with the statement that there is no such thing as an aseptic resection. I agreed with him. No matter how carefully one opens the bowel even with the cautery, I do not doubt but that cultures will always show a few organisms. In fact I would go farther than Doctor Colvin and say that there is no such thing as aseptic surgery at all. A few months ago Doctor Howes of New York, who I think has done as much work on wound healing as anyone in this country, made the statement at the surgical conference at the University of Minnesota that no matter how carefully one sterilizes the skin before operation, as soon as the incision is made, immediately we have a contaminated wound. I do not think that anyone would argue from this that we should stop trying to cleanse the skin as well as we know how. Not at all. We all know that if we take care of the gross contamination that the body can handle the slight. The same is true of the peritoneal cavity. If we protect it from the ninety-nine bacteria, nature will look after the hundredth.

I would like to show a few slides that demonstrate the precautions that we take to prevent obstruction to the proximal jejunal loop and blowouts of the duodenal stump.

Obstruction of the afferent loop with resulting increased pressure in the duodenum and proximal jejunum is due principally to one of three causes. The first is kinking at the junction of the stoma and the proximal loop. The second is edema and swelling at this point that may occur during the first few days postoperatively. The third is slipping of the stoma up through the opening in the transverse mesocolon with resultant constriction of either the afferent or efferent loop, or both.

We aim to prevent the first of these complications by a maneuver that rotates the stomach so that instead of it lying in its customary transverse direction, it is held in an anteroposterior direction. This is accomplished by suturing the lesser curvature of the stomach to a point in the posterior mid-point of the opening in the transverse mesocolon. This rotates and holds the lesser curvature posteriorly. The greater curvature is rotated and sutured anteriorly. This position is maintained by several more interrupted sutures joining the opening in the transverse mesocolon to the stomach. When this is done the proximal jejunum, as it comes forward from the ligament of Treitz, can join into the cut end of the stomach comfortably without twisting or kinking.

(Continued on Page 70)

# SMOOTHAGE

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# SEARLE

RESEARCH IN THE SERVICE OF MEDICINE

## MINNEAPOLIS SURGICAL SOCIETY

(Continued from Page 68)

Edema and swelling of the proximal stoma can be overcome by the introduction of a naso-suction tube through the stoma into the proximal loop. We attach a metallic bucket onto the end of this tube. This can be palpated through the stomach wall and can be milked down through the stoma and 3 or 4 inches into the afferent loop without breaking the aseptic technique.

Slipping of the stoma up through the opening in the transverse mesocolon can be prevented by the careful application of the sutures joining the opening in the transverse mesocolon to the wall of the stomach. These should be placed 1.5 to 2 inches above the stoma. We have found that if these sutures are placed from above before the stoma is pulled through the rent in the mesocolon that this procedure is much easier and can be accomplished more thoroughly than when one tries to put them in after the stoma is pulled down through this opening. For this we use interrupted silk sutures. All of these are placed before any is tied. The stoma is then pulled through the opening and the sutures are tied from above.

DR. OWEN H. WANGENSTEEN: We are all aware of the fine work that Doctor Culligan is doing in this type of surgery. I must confess that I feel very much flattered to note that Doctor Culligan interests himself so seriously in the problem of aseptic gastric resection. This method of operation has been used continuously now at the University Hospitals since June, 1938.

With reference to the problem of gastric ulcer, there has been in recent years a definite swing toward earlier operation in all patients with recurrent or persistent defects. The difficulty is that, in some instances it is impossible to say with certainty whether an ulcer or cancer is present. And it is not well to allow this uncertainty to be resolved by the elapse of time. In prepyloric defects particularly, the incidence of carcinoma is frequent enough to warrant anyone responsible for the disposition of the case looking questioningly at prolonged conservative treatment, in the presence of persistent defect. My experience suggests that prepyloric defects are malignant in approximately 20 per cent of instances—an incidence which suggests the wisdom of early operation. Even higher on the lesser curvature, at or above the sulcus angularis, the ability of anyone, employing all the pre-operative diagnostic criteria available, to distinguish benign and malignant ulcers is far from infallible. Anyone who affects to be able to do so arrogates to himself an extension of vision which only the microscope affords. True enough, in certain instances, benign gastric ulcer may become malignant, an occurrence to which Wilson and MacCarthy gave considerable emphasis many years ago. The more important consideration is, however, that in instances of persistent gastric ulcer, earlier recourse should be had to gastric resection, permitting microscopic examination to resolve the confusion as to whether the lesion is benign or malignant. Inasmuch as gastric resection can be done in experienced hands at a risk not exceeding 2 per cent in resections of election, there should be less hesitancy on the part of physicians to have patients with per-

sistent gastric defects of dubious nature undergo operation.

DR. ORWOOD J. CAMPBELL: How often does anemia develop in patients with extensive gastric resection?

DR. WANGENSTEEN: Our experience is that secondary anemia in patients undergoing resection for ulcer is unusual. Approximately four years ago, when Castle of Harvard, who discovered the intrinsic factor in the gastric mucosa, was here, he reviewed this very question. He said that inasmuch as the intrinsic factor in man resides largely in the fundic mucosa, the part of the stomach which remains, the occurrence of anemias after this type of resection would be unlikely. Experience has borne out Castle's prediction. However, I do have one patient for whom total gastric excision was done for carcinoma of the stomach five years ago, who does have pernicious anemia. Meulengracht of Copenhagen you will remember found the intrinsic factor in the gastric mucosa of the pig to be present in the antrum. In man, however, as Castle has shown, it is present largely in the fundic mucosa.

There is a symptom-complex which occurs in some patients after gastric resection which merits attention. I refer to the symptoms provoked by quick emptying of the stomach. Normally the stomach with an intact pylorus empties only in jets. After gastric resection, the stomach empties very rapidly. Owing to the distension of the duodenum and jejunum resulting therefrom, the patient may have gas pains and even nausea unless he eats slowly. After the elapse of a few weeks, however, the patient's jejunum usually accommodates itself to the rapid reception of food. In the meantime, however, the patient must be cautioned to eat and drink slowly to avoid the distress of rapid distension of the jejunum occasioned by the quick dumping of the stomach. We have also been interested to observe that some patients after gastric resection insist they cannot drink milk. Whether this is a physiologic or a psychologic phenomenon, we are proposing to explore.

DR. CHARLES E. MERKERT: Do patients have diarrhea from quick emptying of the stomach following these gastrectomies?

DR. WANGENSTEEN: In my experience, diarrhea after gastric resection for ulcer is unusual. The patients in whom we observe it rather commonly as a physiologic phenomenon are those who have undergone hemicolectomy for carcinoma of the cecum. Water is absorbed largely in the terminal ileum and the right colon dries the fecal content a little more. When the surgeon, in his anxiety to effect complete lymph node removal, exercises the terminal two or three feet of the ileum, as well as the right colon, temporary diarrhea is not uncommon.

The meeting adjourned.

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# In Memoriam

## EDWARD I. BROWN

Dr. Edward I. Brown, Saint Paul, was born in Morpeth, England, on April 21, 1869. He came to the United States in the year 1890, locating in Saint Paul and working as a clerk while going to night school. In 1896, he was admitted to Hamline University Medical School, from which institution he graduated as an M.D. in 1900. In that year he started to practice medicine in Saint Paul and was a member of the Bethesda Hospital staff for over thirty years.

Because of failing health, Dr. Brown retired from active practice of medicine about two years ago. On September 25, 1944, he suffered a massive stroke of apoplexy from which he died October 8, 1944, at the age of seventy-five years.

Dr. Brown was a member of the Minnesota State Medical Association, the Ramsey County Medical Society and the Phi Rho Sigma Fraternity.

He is survived by one son, Archie Brown of Michigan; two grandchildren; two sisters, Mrs. Hewetson of England and Mrs. J. F. Drake of British Columbia; three brothers, David of Sarnia, Ontario, William and John of Newcastle-on-Tyne, England, a host of patients and friends. Burial was at Roselawn Cemetery, Saint Paul, October 10, 1944.

E. G. STERNER, M.D.

## E. P. CHRISTENSEN

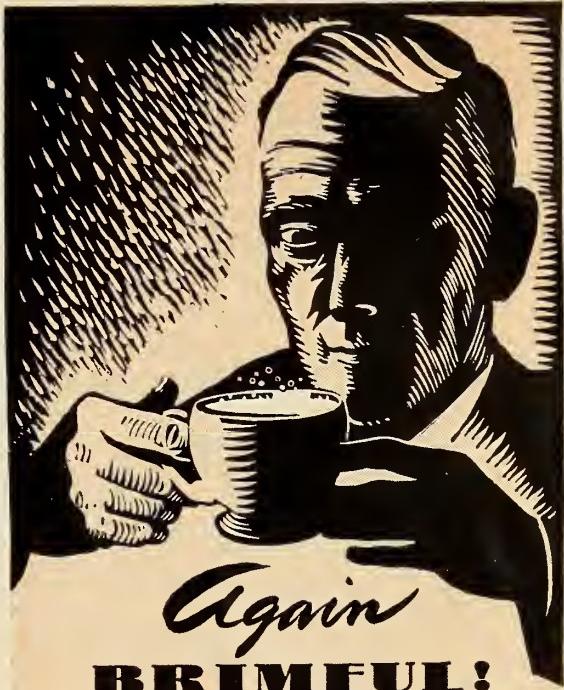
Dr. E. P. Christensen of Two Harbors, Minnesota, died November 10, 1944, at the age of sixty-four. He had retired from active service November 1, 1944, following sale of the Two Harbors Hospital to the County Health Center.

Dr. Christensen was born in Ludington, Michigan, April 25, 1880. He attended Kalamazoo College at Kalamazoo for two years before he studied medicine at Rush Medical School, graduating in 1906. He took his internship at Presbyterian Hospital in Chicago.

He came to Two Harbors in 1907 and was associated with Dr. J. D. Budd. When Dr. Budd retired, Dr. Christensen and Dr. Burns bought the hospital, and later on at the retirement of Dr. Burns, Dr. Christensen and Dr. Wilbur became associated in its management.

Dr. Christensen served as first president of the Rotary Club, as council member, city and county physician, and chief surgeon for the D. M. and I. R. Railway. He was a member of the Masonic Blue Lodge, Scottish Rite, Shrine, and Jester, honorary society.

Dr. Christensen was a member of the St. Louis County Medical Society, Minnesota State and American Medical Associations. He is survived by his wife and two sons, Dr. Bud Christensen of Oakland, California, and Lt. Edward Christensen, serving at Mare Island.



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## HERBERT DAVIS

Dr. Herbert Davis, in practice in Saint Paul since 1888, died November 16, 1944, at the age of eighty-five. He was active until the day of his death.

Herbert Davis was born on a farm near Oshkosh, Wisconsin, April 14, 1859. His father, James Davis, came from New York in 1850, and took up a homestead in Wisconsin. His mother was a great lover of books and people, and was the one who gave him his greatest encouragement to study medicine.

He attended the country school and later the Normal School at Oshkosh. His M.D. degree was obtained at Rush Medical School in Chicago in 1880 when he was twenty-one years old.

Upon graduation he obtained a post as company physician with the Jackson Mining Company at Nauvoo, Michigan. Then began a friendship with William M. Olcott and Penticost Mitchell who were clerks in the drug store below his office and who later became president and vice president, respectively, of the Oliver Mining Company of Duluth. This friendship continued after he was transferred to Fayette, Michigan, and to Two Harbors, Minnesota, and when he left the employ of the Mining Company to begin private practice, he tried to locate in Duluth to be near his two friends. Unable to find a house in Duluth, he came to Saint Paul in 1888.

Dr. Davis lived first on Pleasant Avenue and opened an office on Selby Avenue having to climb Selby hill to reach his office. Soon, however, he shared an office

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in the Moore Block at Seven Corners with Dr. Parks Ritchie, and began building one of the largest general practices in the city. When the Lowry Medical Arts Building was built he moved and shared offices at different times with Dr. Alexander Colvin, Dr. Paul Cook, Dr. Carl Teisberg, Dr. F. H. Neher and, since 1920, with Dr. John S. Abbott.

Dr. Davis was made General Examiner in Saint Paul for the Northwestern Mutual Life Insurance Company of Milwaukee in 1899 and held that position until his death. During this long period he is said to have made some 12,000 examinations.

He was a member of the Minnesota Academy of Medicine, the Ramsey County Medical Society, the Minnesota State and American Medical Associations.

He was an ardent hunter and rarely missed a season until this year. He found time for almost daily games of pool at the Minnesota Club and weekly games of poker.

He was family doctor to many families during his many years of practice and brought many children into the world before he gave up obstetrics in his later years. His good judgment and pleasing manner endeared him to his many patients. He devoted his life to his profession, starting the day early to make his calls, and was always concerned about the welfare of his patients.

Dr. Davis married Jennie Wallace of Clinton, Ontario, in 1883. Their oldest child, Lucile (Mrs. John M. Harrison) died in 1933. His widow, daughter Marguerite, and son Wallace, a veteran of World War I, are still living.

#### C. FRANCIS EWING

Dr. C. F. Ewing, a pioneer physician of Wheaton, Minn., died November 28, 1944, at the age of seventy-two.

Dr. Ewing was born in Angola, Indiana, October 26, 1872. He received his preliminary education in the Angola schools and his degree of B.S. at the Tristate College in Angola in 1892. He obtained his M.D. degree at the University of Minnesota Medical School in 1901.

Previous to coming to Wheaton forty years ago, Dr. Ewing practiced at Anoka for three years. He operated a private hospital at Wheaton for thirty-five years and was surgeon for the Milwaukee and Great Northern Railways.

Dr. Ewing took a prominent part in the community life of Wheaton and was an enthusiastic golfer, a skillful hunter, a fisherman, and a gun fancier. He was of a benevolent nature and made many friends. He was an advocate of all the progressive movements to improve his community and section of the country.

He was a member of the West Central County Medical Society, the Minnesota State and American Medical Associations.

#### ERNEST L. MELAND

Dr. Ernest L. Meland, well-known urologist of Minneapolis, died December 3, 1944, at his home. He was forty-three years old.

Dr. Meland was born at Pelican Rapids, Minnesota,

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- Chicago Medical Society

*What—*

- Second Annual Clinical Conference

*When—*

- February 27, 28, March 1, 1945

*Where—*

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*How—*

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January 15, 1901. He studied three years at St. Olaf's College, Northfield, Minnesota, and was in the 1925 medical school class at the University of Minnesota. He served as intern in the Minneapolis General Hospital in 1926 and practiced in Dalton and Fergus Falls, Minnesota, before entering the Mayo Foundation as a Fellow in Urology in August, 1929. On receiving the degree of M. S. in Urology in 1932, he moved to Minneapolis.

He was clinical assistant professor of surgery of the University of Minnesota, member of the American Urological Association, the Hennepin County Medical Society, the Minnesota State and American Medical Associations, and at the time of his death was secretary of the Alumni Association of the Mayo Foundation.

**FRANCIS EDMUND MINGO**

Dr. Francis E. Mingo of Hugo, Minnesota, died October 29, 1944, at the age of sixty-three.

Dr. Mingo was born August 16, 1881, at Glencoe, Minnesota, attended public schools at Centerville, near White Bear, Minnesota, and graduated from Central High School in Minneapolis in 1902. He graduated from Hamline Medical School in 1905.

Dr. Mingo practiced at Hugo for twenty-eight years and was a member of the Washington County Medical Society, the Minnesota State and American Medical Associations. He was local Health Officer.

He is survived by several children—Ruth, Gertrude, Philemon, Corporal Ignatius and Sgt. Alcuin Mingo, and also by a sister, Mrs. A. Aubin, of Minneapolis.

**REUBEN M. PEDERSON**

Dr. Reuben M. Pederson, of Minneapolis, died November 20, 1944, at the age of sixty-four.

Dr. Pederson was born at Hanley Falls, Minnesota, March 11, 1880. He obtained his B.A. degree from Augsburg College in Minneapolis in 1902, and his M.D. degree from University of Minnesota Medical School in 1906. Following graduation he interned at Swedish Hospital in Minneapolis. He took postgraduate work at New York University in 1914, and at Tulane University, New Orleans, in 1915. He served in the Army Medical Corps from 1916 to 1919 as a Lieutenant Colonel.

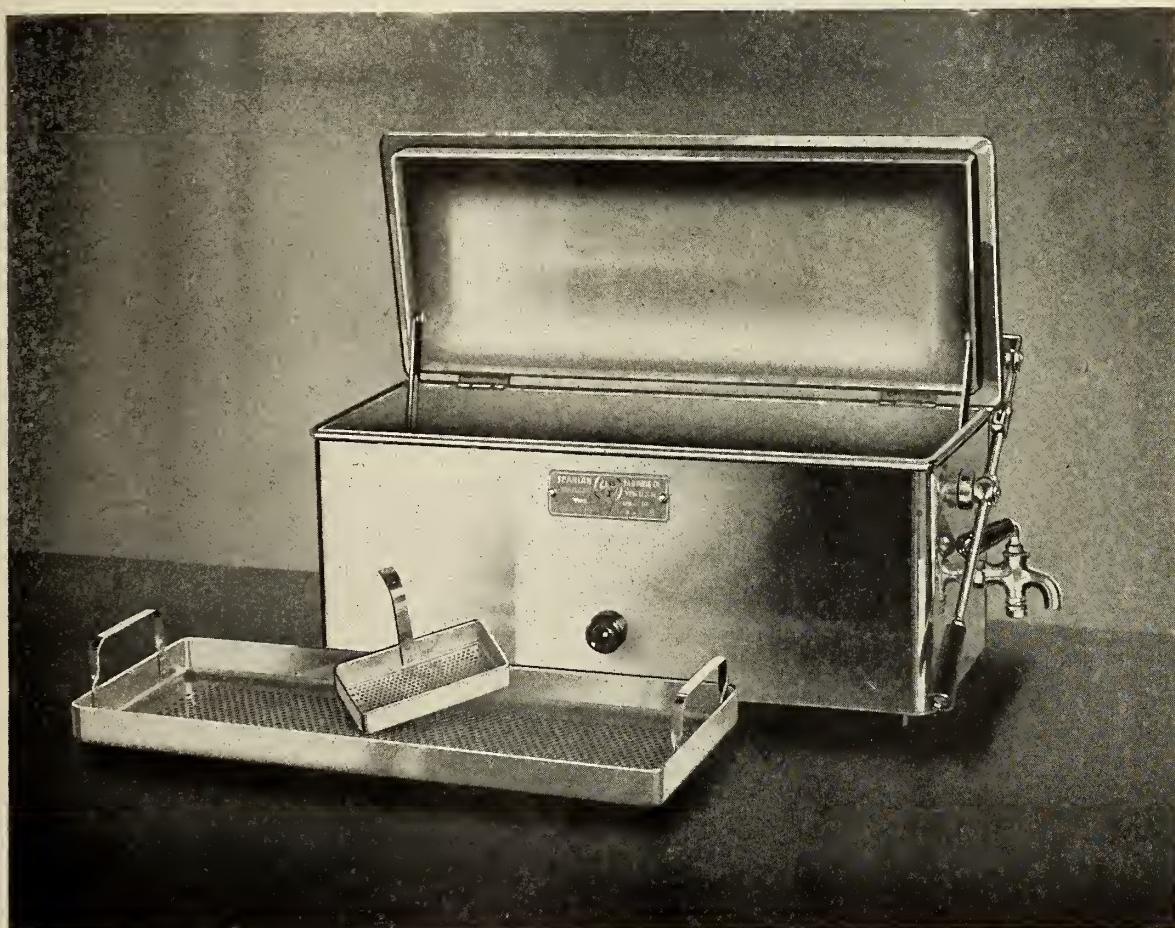
Dr. Pederson was a member of the Cataract Masonic Lodge, Scottish Rite, Zuhrah Temple, Hennepin County Medical Society, Minnesota State and American Medical Associations, and the American College of Surgeons. He was also a member of the Minneapolis Athletic Club and Minneapolis Elks Lodge.

**CLARENCE ADDISON RATHBUN**

Dr. C. A. Rathbun, a St. Cloud physician and surgeon for thirty years, was shot and killed November 15, 1944, when a deer hunter mistook him for a deer. He was hunting in Maple Grove township in northern Becker County at the time.

Dr. Rathbun was born December 14, 1891, at Rice, (Continued on Page 76)

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Volume 126—November 11, 1944

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Minneapolis, Minnesota

(Continued from Page 74)

Minnesota. He obtained his M.D. degree at Loyola Medical School in Chicago in 1914. He took postgraduate work in surgery in 1922 at the Chicago Postgraduate Medical School.

Following graduation, he practiced at Sauk Rapids, Minnesota, for two years. He was in the Army for eighteen months during World War I, and practiced in Nebraska one year before moving to St. Cloud.

Dr. Rathbun was a member of Stearns-Benton County Medical Society, the Minnesota State and American Medical Associations.

### ELMER JOHN TIEDEMANN

Dr. E. J. Tiedemann of Adrian, Minnesota, died October 28, 1944, at the age of eighty-three.

He was born at Mauston, Juneau County, Wisconsin, August 10, 1861. At one time he held an appointment at the U. S. Marine Hospital at La Crosse, Wisconsin, but practiced at Adrian from 1918 until a few weeks before his death.

Dr. Tiedemann lost his wife in 1936. He is survived by a son, Dr. Ian Tiedemann of Glendale, California, and a daughter, Mrs. Leander Kramer of Odrian.

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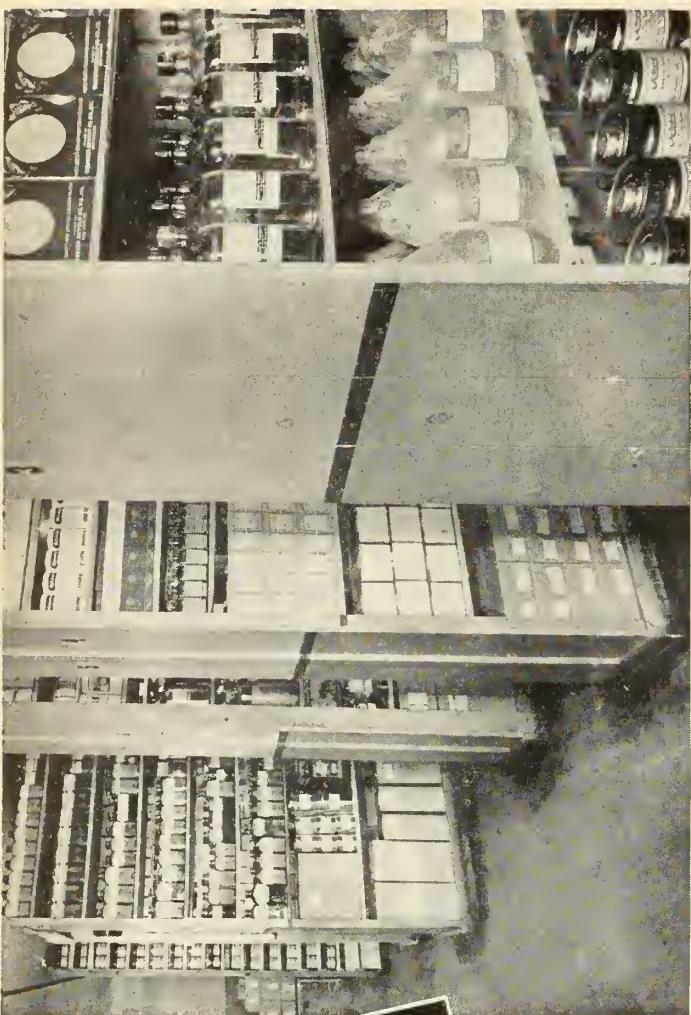
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## Of General Interest

Dr. Frederick N. Solem, of Spicer, has been appointed to the staff of the State Hospital in Walker.

\* \* \*

Dr. J. J. Morrow, after many years of practice in Austin, has gone to the Pacific Coast, where he plans to make his home.

\* \* \*

Lt. Colonel B. B. Cochrane, Saint Paul, is now the Commanding Officer of the 7th Medical Battalion, attached to the 7th Division.

\* \* \*

Dr. John S. Abbott has closed his office in the Lowry Medical Arts Building, Saint Paul, to take a position at the Veterans' Hospital, Fort Snelling.

\* \* \*

Pfc. Vacil Kalinoff, son of Dr. and Mrs. D. Kalinoff of Stillwater, was slightly wounded in action in France on November 19, 1944. He is now in England.

\* \* \*

Dr. Herman Juergens, of Belle Plaine, was painfully burned when an alcohol lamp with which he was lighting a cigaret exploded, throwing the flaming fluid in his face.

\* \* \*

Dr. M. I. Howard, of the Mankato Clinic, spent November in Chicago, doing postgraduate work at the Cook County Postgraduate School of Medicine and Surgery.

\* \* \*

A paper entitled "Penicillin: Its Use in Pediatrics" was given by Dr. W. A. Herrell, of the Mayo Clinic, at the meeting of the American Academy of Pediatrics in St. Louis.

\* \* \*

Dr. R. B. Kirklin, of the Mayo Clinic, made two addresses at the recent meeting of the Toledo Academy of Medicine held in Toledo as a memorial to Dr. John Murphy.

\* \* \*

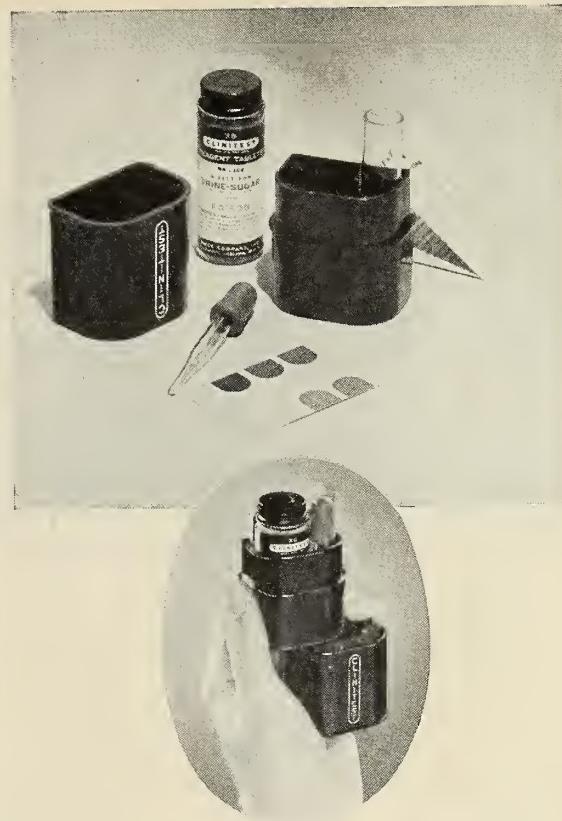
Dr. Roy A. Lundblad, recently released from the armed services after twenty-six months of duty, has returned to Minneapolis and opened offices in the Medical Arts Building.

\* \* \*

Dr. C. E. McNaught, of St. James, who served with the air service command at Wichita, Kansas, in 1942 and 1943, has closed his offices temporarily and returned to the air service.

\* \* \*

Dr. Paul A. O'Leary, of the Mayo Clinic, attended the National Venereal Disease Control Conference in November at St. Louis, where he reported the first year's observation of penicillin therapy.



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Dr. R. G. Lee, of Baudette, has been confined to his home as the result of a sudden heart attack. While Dr. Lee's condition was not regarded as serious, complete rest in bed for some weeks was prescribed.

\* \* \*

Colonel Richard B. Hullsieck of Saint Paul, formerly medical officer in charge of the draft in Minnesota, is now the Executive Officer with the 8th Convalescent Hospital in Northern France.

\* \* \*

Captain Thomas J. Kenyon, formerly pathologist at St. Joseph's Hospital, Saint Paul, is now Chief of the Laboratory Service at the Northington General Hospital, Tuscaloosa, Alabama.

\* \* \*

The name of Kenneth Frederick Ernst of Minneapolis is among those who recently received promotions from Lieutenant Colonel to Colonel in the Army Medical Corps, as announced by the Surgeon General.

\* \* \*

Drs. Kennedy, Logan, and Aldrich, of the Mayo Clinic, attended the meeting of the American Academy of Pediatrics held in St. Louis in November. Dr. Kennedy is chairman of the Minnesota division of the Academy.

\* \* \*

Dr. L. A. Buie, of the Mayo Clinic, recently spent a week in the East, visiting clinics in Boston, New York

and Philadelphia. He also addressed the Columbia Medical Society at their meeting on November 13 in Columbia, South Carolina.

\* \* \*

Lieut. Col. George A. Williamson has been Chief of the Orthopaedic Section of the Madigan General Hospital, Fort Lewis, Washington, since July, 1944, when he was transferred from DeWitt General Hospital in California.

\* \* \*

Captain L. J. Kucera who, prior to his enlistment in the Army Medical Corps in 1942, practiced medicine in Lonsdale, has been promoted to the rank of Major. Major Kucera is in charge of the induction center at Fort Logan, Colorado.

\* \* \*

Dr. Andrew Sinamark, of the Morsman Clinic, Hibbing, was elected president of the Range Medical Association at their meeting in Eveleth in December. Dr. Bray, of Biwabik, was made vice president, and Dr. Frank Bachnik, of Hibbing, secretary and treasurer.

\* \* \*

The public library at Madelia has been presented with a number of books dedicated to the memory of Dr. W. J. McCarthy. The donor was A. L. Sperry, Owa-

(Continued on Page 82)

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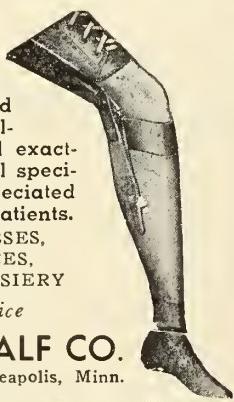
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(Continued from Page 80)

tonna attorney, who was a lifelong friend of Dr. McCarthy.

\* \* \*

Dr. M. J. Lindahl, Sherburn, suffered a concussion which rendered him unconscious for several hours when his car skidded on the icy pavement just north of Sherburn. Although his head was severely bruised, x-rays revealed no fracture.

\* \* \*

Dr. Mary Ghostly, of Lake Julia Sanatorium, and Drs. D. F. McCann, E. W. Johnson, and Percy Watson, of Bemidji, attended the meeting of the Upper Mississippi Medical Society held at the State Sanatorium at Ah-Gwah-Ching.

\* \* \*

"The Syndrome of Physical Allergy as it Affects the Nose, Throat, and Ears," and "Chemotherapy in Otolaryngology" were the subjects of addresses given by Dr. H. L. Williams, of the Mayo Clinic, before the Dallas Academy of Ophthalmology and Otolaryngology in Dallas, Texas, in November.

\* \* \*

Dr. Kenneth W. Covey has purchased the practice and equipment of Dr. J. J. Ederer in Manomen and opened offices in the Berge Building there. Dr. Covey, the son of Dr. W. C. Covey, a Bagley dentist, is a graduate of the Minnesota University and served his internship at St. Barnabas Hospital in Minneapolis.

\* \* \*

Under the direction of Dr. O. L. McHaffie, Dr. Karl Emanuel, and Dr. S. N. Litman, the present medical staff of the Webber Hospital in West Duluth, which discontinued operation on December 1, will conduct a clinic on the first floor of the building. Dr. Edwin Webber, founder of the hospital, died in January, 1944.

\* \* \*

Dr. J. Arnold Bolz, having been honorably discharged from the United States Naval Reserve, is now associated with the Itasca Clinic in Grand Rapids. A native of Elgin, Illinois, Dr. Bolz is a graduate of the University of Chicago and served his internship at the University Hospital in Minneapolis.

\* \* \*

Dr. Kenneth A. Peterson, son of Dr. R. A. Peterson, of Vesta, who recently completed his officer's training at the medical Field Service School, Carlisle Barracks, Pennsylvania, has been commissioned a first lieutenant. Before his induction into the Army, Lieutenant Peterson was in medical practice in Minneapolis.

\* \* \*

A certified copy of the citation conferred on Major L. A. Smith has been received by his wife, who is superintendent of nurses at the Tyler hospital. The citation was for the Bronze Star, presented to Major Smith for exceptionally meritorious services with the armed forces in the European theater.

Dr. Stanley R. Maxeiner, of Minneapolis, in collaboration with Lt. Colonel Harr E. Bundy, of the United States Veterans Administration, Minneapolis, presented a paper on "Islet Tumors of the Pancreas" before the Western Surgical Association which met in Chicago during the first week in December.

\* \* \*

Announcement has been made of the marriage on December 13 of Miss Mary Huberty, of Hawley, to Nels John Thysell, Lt. (jg) USNR, son of Dr. and Mrs. F. A. Thysell, of Moorhead. Lt. Thysell, who is stationed at the Orange County Hospital, Orange, California, is a graduate of the University of Minnesota Medical College and a member of Nu Sigma Nu.

\* \* \*

Dr. McIndoe, a former fellow in surgery at the Mayo Foundation, who has been practicing medicine in London for the past fourteen years, has been honored with conference of the titles, "Commander of the British Empire" and "Officer of the Order of the White Lion, Czechoslovakia." Dr. McIndoe is also a holder of the William White Scholarship.

\* \* \*

Plans are being perfected for the establishment of a fellowship in urological research at the Minnesota School of Medicine as a memorial to Dr. Ernest Meland, Edina, who died in his forty-third year on December 3, 1944. Dr. Meland was nationally known for his notable contributions to the study of urological diseases. Dr. J. K. Anderson, president of the Hennepin County Medical Society, is chairman of the committee for raising funds, and James Baker is the treasurer.

\* \* \*

Dr. A. C. Stahr has taken over the practice at Hopkins, Minnesota, of Dr. R. H. Picha, who was inducted into military service on November 15. Dr. Stahr took his medical degree in 1938 at the University of Minnesota. His internship at the Jersey City Medical Center, Jersey City, N. J., was followed by three and a half years in the Navy. After his discharge he was associated with the Saint Paul Clinic for eight months. For the past year and a half he has been connected with the urology section of the surgical department at the University of Minnesota.

\* \* \*

Dr. Daniel C. Gates, Minneapolis, who has been serving as assistant to the director of the office of Community War Services, a Federal Security Agency, has been appointed city director of health education. The position is one of the three recently created on the recommendation of Dr. J. F. Hill, city health director in Minneapolis.

Dr. Gates, who holds both a master's and a doctor's degree in public health from the University of Michigan, came to Minneapolis in 1941 as secretary of the health and medical care section of the Council of Social Agencies.

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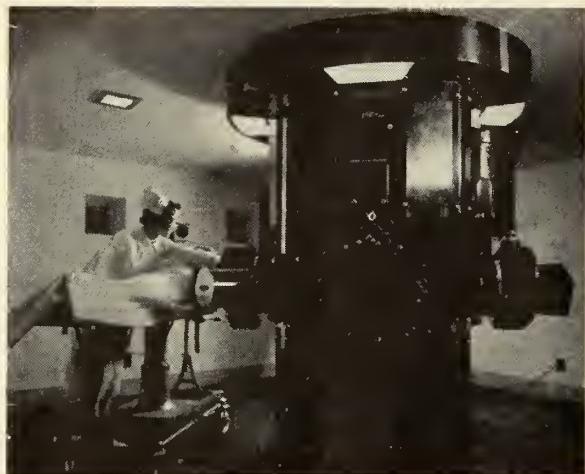
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# ♦ Reports and Announcements ♦

## MEDICAL BROADCAST FOR JANUARY

The following radio schedule of talks on medical and dental subjects by William O'Brien, M.D., Director of Postgraduate Medical Education, University of Minnesota, is sponsored by the Minnesota State Medical Association, the Minnesota State Dental Association, the Minnesota Hospital Association and the University of Minnesota School of the Air.

Jan. 3—11:00 A.M. (WLB)	Fats and Oils
Jan. 6—9:15 A.M. (WCCO)	*Reducing Maternal Deaths
Jan. 6—11:30 A.M. (WLB-KROC)	Medicine in the News
Jan. 10—11:00 A.M. (WLB)	Protein Requirements for Growth
Jan. 13—9:15 A.M. (WCCO)	*Saving New Born Babies
Jan. 13—11:30 A.M. (WLB-KROC)	Medicine in the News
Jan. 17—11:00 A.M. (WLB)	Water Balance
Jan. 20—9:15 A.M. (WCCO)	*Infant Care in First Year
Jan. 20—11:30 A.M. (WLB-KROC)	Medicine in the News
Jan. 22—4:15 P.M. (WCCO)	Your Hospital in War-Time
Jan. 24—11:00 A.M. (WLB)	Milk, The Ideal Food
Jan. 27—9:15 A.M. (WCCO)	*Dental Care in Pregnancy
Jan. 27—11:30 A.M. (WLB-KROC)	Medicine in the News
Jan. 31—11:00 A.M. (WLB)	Disorders of Nutrition

\*Keyed with subject of the month—Minnesota State Medical Association Packet of Information for Members.

## SECOND ANNUAL CHICAGO MEDICAL SOCIETY CLINICAL CONFERENCE

The Chicago Medical Society is holding its Second Annual Clinical Conference at the Palmer House, Chicago, on February 27-28 and March 1, 1945. The sponsoring of this annual clinical conference for physicians of the Middle West has become an important function of the Chicago Medical Society following its inauguration last spring.

The program of these three days, of intensive post-graduate medical education, will be replete with the names of widely known and well recognized, local and national, medical educators, men who will present a wide variety of currently interesting medical topics. The program being arranged will be of real interest to all physicians, general practitioners and specialists alike. The presentations will begin at 8:00 A.M. and will continue all day throughout the three days, with a special program Tuesday evening and a well-planned banquet program Wednesday evening.

Hotel reservation should be made with the Palmer House, Chicago, at once.

## NATIONAL CONFERENCE ON MEDICAL SERVICE

The National Conference on Medical Service will be held Sunday, February 11, 1945, in the Red Lacquer Room of the Palmer House, Chicago, Illinois. Registration will precede the morning session which will open at 9:00 o'clock. More time than usual has been set

aside for questions and informal discussion, and everyone attending is urged to participate.

The conference theme, "Distribution of Medical Care," will be presented in its various aspects in the following program:

### Morning Session—9:00 A.M.

President's Address—Medicine and the National Crisis—C. L. PALMER, M.D., Pittsburgh

What Labor Expects from Medicine—WALTER REUTHER, Vice President, United Auto Workers, CIO, Detroit

What the Farmer Expects from Medicine—ROGER C. CORBETT, Ph.D., Secretary, American Farm Bureau, Chicago

What the Insurance Man Expects from Medicine—HARLAN S. DON CARLOS, Manager, Life, Accident and Group Claim Department, The Travelers' Insurance Company, Hartford, Connecticut

### Open Discussion

### Noon Luncheon—12:00 M

(Wartime regulations make it impossible for hotels to serve Sunday luncheon for conference. Regular dining room facilities of hotel will be available.)

### Afternoon session 1:45 P.M.

The Miller Bills and Medical Legislation by Congress—THE HONORABLE A. L. MILLER, Washington, D. C., Congressman from Fourth District, Nebraska

### Questions and Answers

Public Relations Program of the American Medical Association—JOHN FITZGIBBON, M.D., Chairman of the Council on Medical Service and Public Relations, AMA, Portland, Oregon

Changes in the Attitude of Medical Officers toward Medical Education and Practice—LT. COL. HAROLD C. LUETH, M.C., Liaison Officer, Surgeon General and AMA, Chicago

### Discussion

### Prepayment Medical Insurance Plans

Service vs. Indemnity Type of Insurance. (Open discussion.) Moderator—CREIGHTON BARKER, M.D., Secretary, Connecticut State Medical Association, New Haven.

## MINNESOTA SOCIETY OF INTERNAL MEDICINE

At the annual meeting of the Minnesota Society of Internal Medicine held at Rochester, Minnesota, in October, Dr. Harry Oerting of Saint Paul was elected president, Dr. Reuben A. Johnson of Minneapolis, vice president, and Dr. Alex Brown of Rochester, secretary-treasurer.

\* \* \*

## MINNESOTA SOCIETY OF NEUROLOGY AND PSYCHIATRY

The Minnesota Society of Neurology and Psychiatry held the first regular meeting of the year on January 9 at the Minnesota Club in Saint Paul. Dinner was served at 6:30 p.m. Dr. Hewitt B. Hannah discussed "Two Cases of Brain Abscess with Complete Recovery," and Dr. Harold Noran, "Intracranial Vascular Tumors and Malformations." The latter was an inaugural thesis.

Dr. James W. Kernohan was elected president for 1945.



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### **RAMSEY COUNTY MEDICAL SOCIETY**

Ramsey County Medical Society held the final meeting of the year on December 18, 1944, in the auditorium in the Lowry Medical Arts Building. Dr. J. A. Lepak, retiring president, presided. The speakers for the evening were Drs. Robert Rosenthal, John Meade, and Alfred Hoff. Dr. Rosenthal covered children's diseases and the specialized science of pediatrics, with analysis of the first book written on the subject and published by the author, the Italian physician, Paulus Bagellardus, in 1478. Dr. Meade spoke on "Diuretics and the Treatment of Heart Diseases with and without Clinical Edema." Dr. Hoff discussed "Diagnosis and Treatment of Atypical Pneumonia."

Officers serving for 1945 are: President, Dr. Justus Ohage; Vice President, Dr. James J. Swendson; Secretary-Treasurer, Dr. C. K. Williams. Dr. Harry B. Zimmerman is president-elect.

### **ST. LOUIS COUNTY MEDICAL SOCIETY**

Dr. W. J. Ryan, Duluth, president of the St. Louis County Medical Society, began his term of office at the annual meeting held at the Northland Country Club on December 14. Officers elected were: Dr. P. J. Boman, Duluth, president-elect; Dr. T. A. Estrem, Hibbing, vice president, and Dr. R. P. Buckley, Duluth, secretary-treasurer. Drs. A. G. Athens, Richard Baridon, and O. L. McHaffie were appointed on the Judicial Committee, and Drs. P. F. Eckman, F. N. Knapp, and R. J. Moe, on the Economics Committee. Drs. R. B. Bray and Clarence Jacobson were named delegates to the Minnesota State Medical Association, with Drs. G. A. Hedberg and Andrew Sinamark as alternates.

Dr. C. J. Wilson, professor of medicine, University of Minnesota Medical School, talked on "Postwar Trends in Medical Education," stressing the need of postgraduate opportunities for physicians on their return from military service. Dr. Wilson also discussed "Hepatitis."

### **UPPER MISSISSIPPI MEDICAL SOCIETY**

The winter meeting of the Upper Mississippi Medical Society, held at the State Sanatorium at Ah-Gwah-Ching, was addressed by Drs. E. R. Crow and F. F. Callahan, of the sanatorium, and Dr. T. J. Kinsella, of Minneapolis. Dr. Crow spoke on "Nontuberculous Patients at the Sanatorium" and Dr. Callahan discussed "Tuberculosis and the Family Doctor." Dr. Kinsella's subject was "Surgical Conditions of the Heart."

### **WASHINGTON COUNTY MEDICAL SOCIETY**

At the annual meeting of the Washington County Medical Society on December 12, 1944, all officers for 1944 were re-elected unanimously for 1945. Committee appointments will also remain the same for 1945.

The guest speaker, Philip Donohue, M.D., of Saint Paul, gave an elucidating talk on "Urinary Obstruction in Childhood."

# Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

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February, 1945

No. 2

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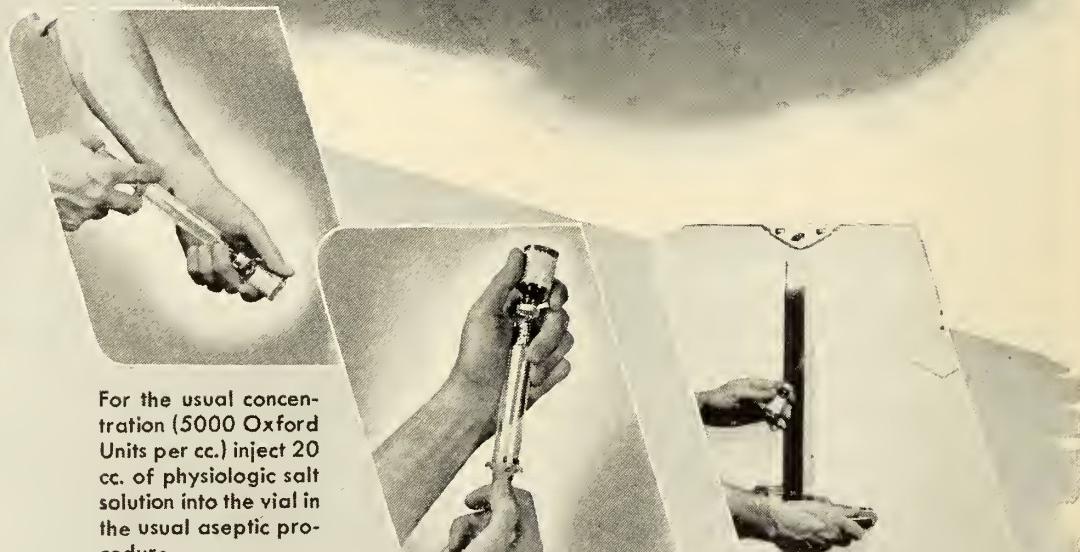
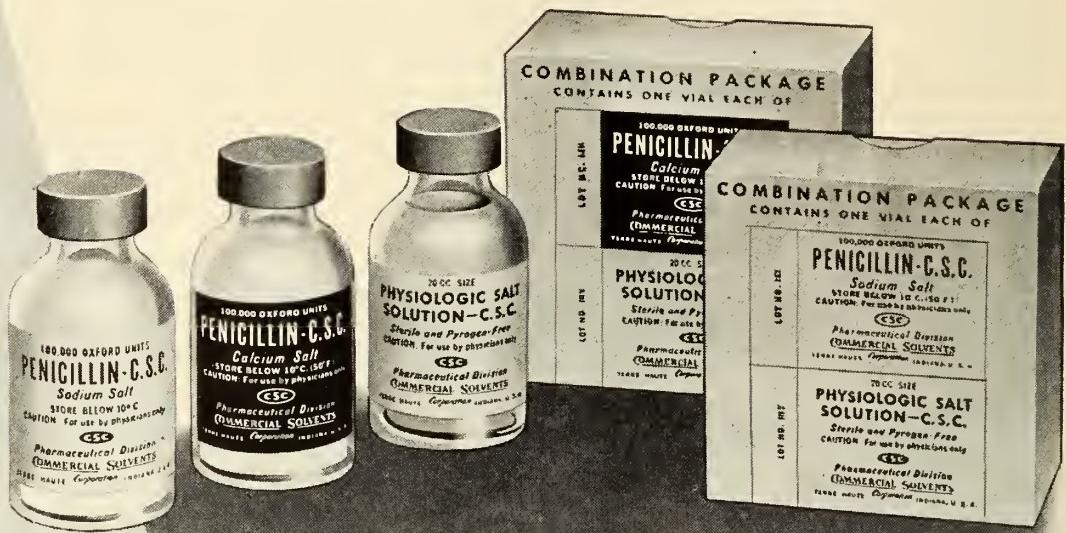
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# Minnesota Medicine

*Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota  
Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society*

Volume 28

February, 1945

No. 2

## THE CONTROL OF MEDICAL TESTIMONY—THE MINNESOTA EXPERIMENT

E. M. HAMMES, M.D.

Chairman, Medical Testimony Committee  
Minnesota State Medical Association  
Saint Paul, Minnesota

THE Minnesota State Medical Association feels gratified about the interest that is manifested throughout the country in our attempt to improve the standard of medical testimony. Repeated requests for information from State Medical Associations have been received. The Minnesota State Bar Association, as well as the Judges of the District and Supreme Courts, have not only been very enthusiastic but have cooperated in every way, legally and otherwise. The Minnesota State Bar Association has a similar committee, and one of the judges informed me that they do not deal as gently with their group as we do with our State Medical Association members.

The two national organizations which will profit most by fair and unbiased medical testimony in our courts have been vitally interested, namely the Association of Railway Claim Agents and the American Association of Insurance Companies. Both of these groups have given our organization nationwide publicity, by publishing a four-page article, "Abuses of Medical Testimony—The Minnesota Experiment," in their respective national journals. The Minnesota State Medical Association hopes that our final results will warrant this generalized interest.

If my memory serves me correctly, it was Dr. Joseph Collins of New York, who was asked on the witness stand what his specialty was and he replied that he was a neurologist, upon which the attorney said, "Dr. Collins, you are a neurologist pure and simple." And Dr. Collins replied

"very pure and quite simple." I presume that this is the main reason why a neuropsychiatrist was appointed chairman of our Medical Testimony Committee. Notoriously, the testimony of a neuropsychiatrist is very pure and quite simple. The medical expert in neuropsychiatry has been subject to considerable ridicule and criticism, justly or otherwise, by the daily press as well as by the medical profession.

Whenever we hear of "the battle of experts," it invariably involves an important will litigation, a murder trial or a criminal case in which the question of insanity or mental competency is the outstanding issue. One might cite the Thaw trial in New York, the Hickman case in California, or the more recent Loeb-Leopold trial in Chicago. Although the expert testimony in some of these cases was questionable, the fact remains that established legal tests for psychiatric disorders, for criminal responsibility or for mental competency differ greatly from well-recognized and sound medical opinions. An individual (1) who has sufficient mental capacity to understand in a general way the extent of his property, (2) who knows the persons who naturally have a claim on his bounty, and (3) who is able to keep one and two in his mind long enough to form a rational judgment concerning them, can execute a will according to law, even while he is a patient in an institution for the insane. The writer, while testifying in court, stated that the person under investigation was normal from the legal standpoint, and on cross-examination had to admit

## MEDICAL TESTIMONY—HAMMES

that she had an intelligence quotient of 70, and was feeble-minded. In criminal trials, the problem is frequently more complicated, the violence done to justice more impressive, and the individual's liberty or even his life may depend on the testimony of the expert. The knowledge of right and wrong test, the irresistible impulse and the mental responsibility are important factors that are involved. Here again the legal conception is at great variance with psychiatric opinion. Prominent psychiatrists like William White and legal minds like Benjamin Cardozo have pointed out the unscientific character of these tests. Frequently well-trained physicians have refused to participate in criminal trials because medical opinions do not conform with well-established legal facts.

The American Psychiatric Association, in conjunction with the American Bar Association and the National Crime Commission, on several occasions have attempted to bring about some clarification in this psychiatric-legal chaos, and also to regulate expert testimony, but without much appreciable success.

Some of these problems encountered in medical testimony, where the opinions can be diametrically opposite and still honest, are pointed out, not to defend either medical expert but to emphasize some of the difficulties that a medical testimony committee encounters in evaluating the evidence presented to them.

Legislative measures have been suggested to regulate expert testimony. In 1926 the House of Delegates of the American Medical Association adopted certain resolutions recognizing the urgent need for such remedial legislation and such change in court procedure as will correct the abuse of expert opinion evidence and approving the efforts of the various bar and medical associations. The House of Delegates also endorsed the principle that in civil and criminal cases the court may appoint expert medical witnesses who shall be paid out of public funds, and who may furnish a written report. The main objection to this proposed resolution was that the jury frequently would be confronted by three conflicting opinions instead of two as under our present system. Furthermore, grave injustice might be done if the jury were influenced by the fact that the court (supposedly non-partisan) had appointed one group of experts and therefore

gave more consideration to that group than to either of the other groups.

In a memorandum relative to "Legislation proposed for the better regulation of expert testimony," Dr. William C. Woodward, Director of the Bureau of Legal Medicine and Legislation, in the *Journal of the American Medical Association*, October 13, 1932, stated that the matter of expert testimony continues to arouse interest but that the interest aroused ends in discussion. He places the entire responsibility of our present situation on the lawyer who introduces an incompetent or dishonest expert witness, and on the judge who permits any person to testify as an expert witness, without having definitely determined, either from his own knowledge or through evidence offered, that the proffered witness has the proper qualifications. He furthermore states "No one ever saw an ignorant, incompetent or crooked expert clamoring at the door of the courtroom for admission to the witness stand as a witness. The lawyers put them there." Woodward suggests that "the first remedy that should be applied, then, to correct existing conditions, is to compel judges to pass properly on the qualifications of proffered expert witnesses, and to compel lawyers to refrain from proffering as expert witnesses persons who are not experts or who are venal." Although this is an excellent suggestion and would develop an ideal situation, it is my opinion that human nature even in lawyers is such that it will not prove successful or practical.

The most progressive and effective law aimed at the abuse of psychiatric expert testimony is the so-called "Briggs Law" of Massachusetts, which has been in effect since 1921. Under this procedure all persons indicted for a capital offense and all persons indicted or bound over to the grand jury, who have previously been convicted of a felony or indicted more than once for any offense, are reported to the Department of Mental Diseases of Massachusetts for examination. The psychiatric examiners are selected by an official medical body, the examination is usually made before the trial and the report is accessible to the Court, to the District Attorney, to the counsel for the defendant and to the probation officer. In the fourteen-year period ending in 1935 Dr. Winfred Overholser reported that 5,159 individuals were examined, of whom 760, or 14.7 per cent, were found to be definitely

insane, were recommended for observation in a mental hospital, or were mentally defective or suffered from other mental abnormalities.

California, Ohio, Rhode Island and Wisconsin have statutes that provide that in criminal cases the court may appoint experts to investigate and to testify as to the sanity of the defendant at the time of the commission of the alleged offense. In an attempt to eliminate the evils of bias and partisanship in expert testimony, the National Conference of Commissioners on Uniform State Laws in 1937 prepared the Uniform Expert Testimony Act. This act authorizes the Court to select and summon expert witnesses in civil and criminal cases; it provides for conferences and joint reports of these witnesses, for their personal examination of the subject matter of the controversy and for the removal of the objectionable features in the hypothetical question. Undoubtedly these measures have in part, at least, lessened some of the evils of expert testimony and in many instances have eliminated the "battle of experts."

The Minnesota State Medical Association has attempted to approach this problem from an entirely different angle. We in Minnesota are somewhat in accord with Lloyd Paul Stryker, who said in his concluding remarks<sup>1</sup> (*New York State Journal of Medicine*, March 1928) that "Legislation of the kind proposed might help, but the real remedy for existing evils lies in the better development of conscience on the part of those who now, for pay, express opinions in which they do not honestly believe, or who for hire advance unfounded or disproven theories in an effort to thwart justice. This remedy—the development of conscience—could best be made effective through the suggestion of Judge Willard Bartlett: the adoption of an amendment to the doctors' principles of ethical conduct, specifically and in clear terms condemning as unprofessional those practices which our enlightened lay and scientific opinion agree in condemning as improper and unworthy." If this remedy were utilized by both the legal and the medical professions justice would indeed be well served in the courts of this country.

#### **The Minnesota Plan\***

What is the Minnesota plan? In July, 1940, Dr. B. T. Adams, president of the Minnesota

State Medical Association, called a joint meeting of some members of our Association and of the Minnesota State Bar Association, to discuss the problem of unethical expert medical testimony. At that time it was felt that attempted legislative measures had improved but not solved the problem. A committee was appointed by the president with the approval of the Council of the Minnesota State Medical Association. The committee was empowered to review those court cases in which medical testimony appeared to the Court or to the attorneys or to some physicians to have been so contradictory as to indicate that one or more of the medical witnesses appeared to be consciously deviating from the truth. The medical testimony under scrutiny was not to be confined to any particular type of legislation nor to any particular court. It included all civil, criminal and personal injury cases and all cases tried before the Industrial Commission. The Committee on Medical Testimony consisted of six members representing the various sections of the state. At their first meeting they determined the following policy:

1. That the judge or attorney or accusing physician must submit in writing a brief statement to the committee, giving the name of the physician to be investigated and also the names of the principals of the trial, in order that a transcript of the entire testimony can be obtained.
2. That a transcript of the entire testimony of the case in question must be obtained and placed at the disposal of our committee. Only by this method will the committee be able to obtain a true knowledge of all the facts and assist them to arrive at an unbiased and just opinion.
3. To assist the committee, members of the State Association in the various specialties must be willing to appear before the committee when requested to do so and express their opinion regarding the testimony in question.

Repeated complaints about medical testimony have been reported to the members of the committee but the accusing physicians or attorneys were not willing to submit them in writing because of possible embarrassment. To obviate this, the committee decided, in 1943, to keep the name of the accusing individual confidential.

The expense incurred to obtain a transcript of a three-day trial in District Court is approximately \$100.00. In the Industrial Commission a sim-

\*The part of this paper pertaining to "The Minnesota Plan" was published in the *Journal of the American Medical Association*, p. 857, March 13, 1943.

ilar transcript will cost about \$75.00. The Council of our State Medical Association has approved these expenditures. The committee has deemed it advisable to ask three outstanding specialists in the question involved to assist the committee in the investigation of a case. Their willing co-operation, sound judgment and unbiased advice have materially lessened the responsibilities of our committee. We also have the assistance of our State Medical Association attorney, to avoid any possible legal complications. Our committee has no disciplinary or judiciary power. In cases where the testimony was of a mildly questionable character, more due to ignorance or overenthusiasm, the committee deemed it advisable to have one of its members discuss the problem with the accused physician and point out his delinquencies. This has proven very satisfactory. In cases of a flagrant character, our committee submits a complete report, with the transcript, to the State Board of Medical Examiners. This Board has judiciary power and can suspend or revoke the offending physician's license. The late Associate Justice Royal A. Stone of the Minnesota Supreme Court suggested that this new plan should be given state-wide publicity. Articles were published in the leading newspapers and news services throughout the state. Editorials have appeared frequently in our State Medical Journal. A detailed outline of this new undertaking was sent to every member of the State Medical Association and to every judge in the courts of our state. It was felt that the existence of such a committee would have a beneficial effect on the few medical men in our state who needed some guidance in their expert medical testimony.

During the first three years, our committee received numerous complaints regarding medical expert testimony in our courts. Some were found unwarranted. The most satisfactory result noted is that during 1943 only one request was made to any member of our committee to investigate the testimony of any medical witness. This, to say the least, was very encouraging. Two cases of such a serious nature were investigated by our committee that the matter was referred to the

Minnesota State Board of Medical Examiners, where proper disciplinary measures were taken. Both of these cases were referred to our committee by physicians from other states and not by members of our own State Medical Association. Members of our own Medical Association and also of our State Bar Association are still very reluctant to report in writing the complaints about questionable medical testimony. They will discuss them with some member of our committee, but when asked to submit them in writing they are unwilling to do so. *Unless there will be more concrete co-operation one has to assume that the members of our state medical and state bar associations as well as the Medical Testimony Committee approve of such questionable expert medical testimony.*

J. W. Holloway, Jr., Director of the Bureau of Legal Medicine and Legislation of the American Medical Association, pointed out to Morris B. Mitchell, Chairman of the Committee of the Judicial Council of the Minnesota State Bar Association, that unless consideration be given to the crooked lawyer as well as the crooked medical expert, very little could be anticipated from this program. He proposed, to get down to the roots of the evil, that the Bar Association appoint a committee to which could be referred all cases that are called to the attention of the medical committee, with the idea in mind that if it be found that the attorney who proffered the suspected testimony did so with a knowledge of its falsity then he should be disciplined along with the medical expert witness.

The Minnesota State and the local Bar Associations have committees to which our committee can refer any questionable case for investigation and disciplinary action. The judges of the Supreme and District Courts, as well as the members of the Bar Association, have been very co-operative and our committee greatly appreciates their assistance.

This program of the committee has been outlined in detail because of the many requests we have received regarding its inception and method of functioning.

## OBSERVATIONS ON CHEMOTHERAPY

WESLEY W. SPINK, M.D.

Associate Professor of Medicine  
University of Minnesota Medical School  
Minneapolis, Minnesota

THE outstanding advancements concerning the use of the sulfonamides and other antibiotic agents in the therapy of infectious diseases have been presented to you today. There remains no doubt that the introduction of the sulfonamides into medical practice constitutes one of the greatest achievements in modern medical history. While the discovery of penicillin has been followed by dramatic results in the therapy of infectious diseases, a word of caution is necessary as more penicillin becomes available for civilian use. The enthusiasm of the laity and many physicians for penicillin has been associated with the impression that the sulfonamides will be relegated to the background, and their useful application in clinical medicine will be sharply curtailed. On the contrary, as has been pointed out already, and will be re-emphasized shortly, penicillin has very definite therapeutic limitations, and the sulfonamides still occupy a very respected place in the control of infectious diseases.

It is desired at this point to clarify one or two aspects of sulfonamide therapy. First of all, a brief discussion of the prophylactic use of the sulfonamides is in order. It is still common practice to utilize the drugs not for the treatment of a clearly defined infection, but to employ them for the prevention of disease. Some of this practice has decided merit, but the ease with which these compounds may be obtained and administered has given rise to an illogical and even dangerous form of medical practice. I still am opposed to the routine use of the sulfonamides as a prophylactic measure in individuals with an acute upper respiratory infection such as the common cold. The market is now flooded with preparations of one of the sulfonamides suspended in solutions designated for applying to the nasopharynx. Convincing evidence that such a procedure is of value in the therapy of upper respiratory infections, and even in sinusitis, is lacking. On the other hand, a physician is justified in pre-

scribing one of the sulfonamides for oral ingestion when an individual with either an acquired or congenital cardiac lesion is suffering from an acute upper respiratory infection. A transient bacteremia in such an instance may be controlled, thus preventing the development of bacterial endocarditis. It has now been established in several clinics in this country that the daily administration of small doses of one of the sulfonamides, such as sulfanilamide or sulfadiazine, to children who have had one or more attacks of acute rheumatic fever will significantly reduce the attack rate of this disease in the treated children, as compared to untreated control groups. The drug is given continuously during those months when upper respiratory infections are prevalent. It would appear that this type of therapy prevents the establishment of an infection, probably of hemolytic streptococcus origin, which often precedes a recurrent attack of rheumatic fever. The possible danger of sensitizing a child to the sulfonamides must be borne in mind, but if such a step will offer some degree of protection to children against a recurrent attack of rheumatic fever, such medication is warranted. Epidemic meningococcic meningitis has also been brought under control by offering a sulfonamide to normal contacts. Apparently sulfonamide treatment with reasonable doses has eradicated meningococci from the pharynx of carriers. The sulfonamides have been of some value in controlling epidemics of hemolytic streptococcic infections. The hemolytic streptococcus is not eliminated from the throats of carriers in this manner. It has been stated that such drugs as sulfaguanidine or sulfasuxidine should be given for several days to patients who are to undergo elective colonic surgery. It is argued that the bacterial count in the colon is reduced in this manner and that if contamination of the peritoneal cavity does occur, there is less danger of peritonitis ensuing. Dr. Owen H. Wangensteen does not subscribe to this practice. I have observed a patient who developed drug fever and a dermatitis on the scheduled

Presented at the Symposium on Chemotherapy at the Annual Meeting of the Minnesota State Medical Association, April 15, 1944.

day of operation following the administration of sulfaguanidine for five days.

Intensive investigations, stimulated by the problems of warfare, have been concerned with the local use of the sulfonamides in the prophylactic and therapeutic management of clean surgical incisions; contaminated traumatic wounds; infected wounds, and infections of the body cavities; and burns. Following an initial stage of enthusiasm, the pendulum appears to be swinging back to a more conservative point of view. The drugs most widely used for local application to tissues are sulfanilamide and sulfathiazole. While some surgeons still dust sulfonamide crystals routinely into clean surgical incisions as a prophylactic measure, this procedure has never been adopted by many competent surgeons, and it is being abandoned by others. This also applies to many types of traumatic wounds, although it is maintained that the incidence of infected tissue is reduced by this practice. Many authorities express the belief, and not without justification, that prophylactic therapy in the case of contaminated traumatic wounds, is best carried out by systemic sulfonamide therapy; that is, instead of applying the compounds locally, the drugs are given parenterally or orally. For this purpose, sulfadiazine is commonly employed, and in some instances, sulfathiazole. When one approaches the problem of treating infected tissue by the local application of one of the sulfonamides, here again, considerable controversy ensues. One school of thought maintains that the infection may be best controlled by systemic medication, thus providing a bacteriostatic agent from the blood to the tissues. Other groups utilize a combination of local therapy along with systemic administration of a sulfonamide. Since the object of therapy in any localized infection is to prevent a spread to adjacent tissues or through the blood stream, adequate oral or parenteral sulfonamide therapy has much in its favor. The too liberal use of a crystalline compound locally may actually retard healing, and in not a few instances may provoke a local hypersensitive type of tissue reaction to the compound, particularly if sulfathiazole is used. It is of interest that in the management of burns, the present tendency is to utilize locally a bland ointment with pressure bandages and to employ the sulfonamides systemically for prophylactic and therapeutic purposes. In brief, local sulfonamide therapy is still advocated for certain specific

purposes, but the indications for this procedure are being more restricted, and systemic medication is being more widely advocated.

It would appear that with larger supplies of penicillin now available more of the material will be directed for use in civilian life. As has been related to you, several types of severe infections may be controlled and completely eradicated by therapy with penicillin, whereas many failures have been recorded following the use of the sulfonamides. The virtue of penicillin is that it is highly specific for certain species of micro-organisms and the drug possesses a low degree of toxicity for the human organism. On the other hand, the specific antibacterial action of penicillin provides one serious problem that physicians must be prepared to meet, and that is they must make every effort to determine the bacteriological cause of an infection before subjecting patients to therapy with penicillin. Even at the present time, only too often, physicians will attempt therapy with one of the sulfonamides, and meeting with failure, will turn hopefully to penicillin, and again, the patients will fail to improve, mainly because the invading micro-organism is not sensitive to the action of penicillin.

Physicians must also be prepared to anticipate therapeutic failures even in those instances where the etiological agent is known to be among the group responding to penicillin activity. This failure may be due, in part, to the use of inadequate doses of penicillin. We are convinced from our experience at the University Hospitals that some of the recommended dosage schedules are definitely inadequate. It is highly desirable in the treatment of a condition like staphylococcal bacteraemia to use large doses, not only in an attempt to control the bacteraemia, but also to eradicate any metastatic lesions. Indeed, we have had what we considered as therapeutic successes only to have a latent metastatic focus flare up many months later. There is experimental and clinical evidence at hand which would indicate that it may be more advantageous to treat some types of bacterial infections with a combination of penicillin and a sulfonamide. This applies especially to staphylococcal sepsis where penicillin and sulfathiazole may be successfully administered. This thesis is logical since the two antibacterial agents each have an independent action upon bacterial metabolism. This combination has

also been successfully employed in the therapy of mixed types of bacterial infection, where the sulfonamide is active against some species of micro-organisms, and penicillin is without effect.

Physicians must recognize that therapy with penicillin consists of much more than merely injecting an active antibacterial preparation into patients at periodic intervals. Many serious problems will arise during the course of therapy, not encountered before. Patients whose doom would have been sealed before the advent of penicillin will respond to this material, but recovery will

be incomplete until metastatic foci are eliminated. This means meticulous clinical observations and prompt surgical intervention. We would recommend that every large hospital should have a penicillin team whose duty is to supervise and carry out treatment in every patient receiving the drug. This is in line with the suggestion of the Stanford group in San Francisco and our experience at the University Hospitals. In this way, the experience of a group will crystallize a more intelligent and successful application of this new type of therapy.

## CHOLECYSTODUODENAL FISTULA

### Report of Case

E. W. MINTY, M.D.  
Duluth, Minnesota

**W**HILE to judge from the literature, internal biliary fistulae are not surgical curiosities, for the average general surgeon they are very uncommon occurrences. Because of this, he is apt to dismiss the condition from his mind, and will thus fail to recognize such a case when confronted with it.

The purpose of this paper is to briefly review cholecystoduodenal fistula, and to present a case which illustrates most of the difficulties likely to be encountered in making a differential diagnosis in the presence of intra-abdominal disease, especially cholecystitis and its complications.

**Incidence.**—The true incidence of this condition is difficult to determine from the literature. Judd and Burden in reporting 153 cases of internal biliary fistulae, found that 117 of them were cholecystoduodenal and four were both cholecystoduodenal and cholecystocolic.

Dean of the University of Iowa in reporting twenty-nine cases of spontaneous internal biliary fistulae, found twenty-four of them to be cholecystoduodenal. Many reports show a few cases out of several thousand autopsies. Isolated reports of one or two cases are reported by various authors. Many of the cases are found at the time of operation. Eliason and Stevens report five cases, one diagnosed preoperatively, found among the 15,677 operative cases on Surgical Section A

in the Hospital of the University of Pennsylvania from September, 1922, to September, 1939. The true incidence cannot be definitely established until a fairly large series of cases are tabulated. The incidence also varies in different localities. In localities where surgeons are removing gall bladders containing stones, the occurrence of cholecystoduodenal fistulae is going to be very rare, as will be discussed later.

Reports of gallstone ileus have appeared in recent literature in increasing numbers, but reports have been usually limited to one or two cases. It is generally conceded by most authors that cholecystoduodenal fistulae are the most frequent of all the internal biliary fistulae.

**Etiology and Pathogenesis.**—Cholecystoduodenal fistula is an attempt by nature to deal with a complication of chronic cholelithiasis, cholelithiasis, or one of its complications. Nature attempts to drain the chronically infected gall bladder and remove the irritating gallstone. Thus it occurs as a late complication and therefore would be expected in elderly individuals. It usually occurs in persons past fifty years of age. Isolated cases have been reported in individuals as young as twenty-eight years, a few in the forties. The incidence is about 3 to 1 in women, which is the relative occurrence of chronic cholecystitis with cholelithiasis, as compared to men.

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Practically all internal biliary fistulae are caused by cholelithiasis, either single or multiple. A few cases are due to malignancy of the gastrointestinal tract and as a complication of chronic peptic ulcers. Fistulae have occurred as a surgical complication. The single metabolic or cholesterol stone, which may become quite large, seems to be chiefly involved. Multiple faceted stones due to infection and composed of cholesterol, bile pigment and calcium salts, may be the etiological factor in that they produce cystic duct obstruction with the resulting empyema, gangrene and rupture of the gall bladder. The abscess formation involves adjacent organs and the resulting inflammatory necrosis produces the fistula. The large cholesterol stones produce another type of pathogenesis in that they produce a destruction of the chronically infected gall-bladder mucosa, and stimulate fibrotic changes in the gall-bladder wall. As this sclerotic process continues, the shrinking forces the stone into the more patent fundus of the gall bladder. The inflammation produces adhesions to adjacent viscera. The pressure necrosis and sclerosis continues, and the stone is forced into the adjacent organ by the constant shrinking of the sclerotic tissues. Thus the fistula is formed.

*Symptomatology.*—The symptoms produced by the formation of cholecystoduodenal fistula are those of nonfistulous acute or chronic cholecystitis. There may be a long-standing history of cholezystic disease, or there may be no symptoms suggestive of biliary tract disease. The single cholesterol stones are usually symptomless. The sclerotic gall bladders which they produce are usually nonfunctioning, and if the infection is not acute, very few symptoms will be referable to the gall bladder. Some cases simulate peptic or duodenal ulcer in their history and findings. The patient may experience an acute attack of cholecystitis, and suddenly obtain relief from pain when the stone passes through the fistula into the lumen of the duodenum. After the fistula forms, most of the findings are those of the complications of the fistula. If a cholangitis or hepatitis develops as a complication of the fistula, chills and fever will be the chief findings. Bear this in mind when considering an acute cholecystitis with empyema. Jaundice may develop, depending upon the patency of the common duct. Acute pancreatitis also may occur secondary to the cholangitis.

*Diagnosis.*—Thus it is readily understandable why the diagnosis of cholecystoduodenal fistula is difficult to make, and is rarely made pre-operatively. Because of the age of the patient one is prone to eliminate procedures which might be helpful, because there are usually coexisting conditions that contraindicate exhaustive studies. The pre-operative diagnosis depends upon:

1. Finding the fistula by roentgen studies of the digestive tract.
- (2) The passage of a gallstone by rectum which is too large to have passed through the ampula of vater.
3. By finding a radio opaque stone in the bowel with obstructive findings in the roentgenogram.

Barium filling of the stomach with the visualization of the fistula and biliary tree, is positive proof of the fistula being present. Air in the biliary tree on the roentgenogram is also diagnostic. Barium in the biliary ducts without showing the fistula, is not diagnostic, as many roentgenologists have experienced this condition in normal gastrointestinal studies, in which the barium has passed into the common bile duct. In a few of these cases the barium passes through the duodenum so rapidly that the fistula is not visualized, and only air in the bile ducts will point to the diagnosis.

The diagnosis of cholecystoduodenal fistula is usually made at the autopsy table or at the time of operation for one of its complications. As from 1 to 2 per cent of all bowel obstructions are due to gall stones, most fistulae are discovered at the time of operation for obstruction. As gall-stone ileus carries a mortality as high as 50 per cent in these elderly people, the author feels that more effort should be made to diagnose gall-bladder disease before this complication occurs.

*Treatment.*—The preventive treatment of this condition is to remove chronically infected gall bladders containing stones as early as possible, especially those gall bladders containing large single stones. Not all these cases are apt to develop cholecystoduodenal fistula, but if the patient is having symptoms of acute cholezystic disease, and has evidence of a nonfunctioning gall bladder with stones after roentgen studies, it is my opinion that if the patient's condition will permit operative procedures, preventive cholecystectomy is advisable. An infected gall bladder is certainly a

menace to health, and stones present add to the likelihood of subsequent complications developing. The older the patient becomes, the more dangerous these complications.

The surgical treatment of cholecystoduodenal fistula centers about the treatment of the complications. The principles involved depend upon the condition that exists at the time of operation. All gall stones should be removed whether they be in the bowel, or in the bile ducts. The one exception is that of the stone which has passed into the colon, and is not too large to pass freely by rectum. A search should be made for other stones, particularly if the stone found is faceted, as these stones are usually multiple, and if one is overlooked, recurrence of bowel obstruction is likely. One should determine the site of the fistula before closure of the abdomen.

The question then arises, what to do with the fistula? The answer to this question depends upon its location, and as to whether cholangitis, hepatitis, or pancreatitis is present, or likely to occur. If a cholecystocolic fistula is coexistent with the cholecystoduodenal fistula, cholangitis, if not already present, is very likely to occur if the fistula is not closed. The existence of remaining stones in the gall bladder may indicate taking down the fistula and a cholecystectomy. Most surgeons are aware of the dangers involved in closure of the duodenum, namely, failure to heal because of the close proximity to the pancreatic juices with the formation of duodenal sinuses and duodenal stenosis.

As the duodenal content is relatively sterile, cholangitis is not likely to occur, and if not present at the time of operation, this can be considered a minimal subsequent possibility. The gall bladder is usually obliterated by sclerotic tissue, and becomes a sclerotic sinus after the stone is extruded into the duodenum. Because of this fact, the shrinking that will take place will ultimately close the lumen, and the gall bladder becomes a fibrotic band of scar tissue, if the common duct remains patent. Cases studied at autopsy bear out this fact. Also the examination of the lumen of the fistula shows considerable shrinkage, as compared to the diameter of the extruded stone found at operation. Therefore, if cholangitis is not present, the fistula should be left intact, rather than run the risk of submitting the patient to an external duodenal sinus, or stricture

by taking down the fistula. Nature can remedy the situation much better and more safely.

If it is necessary to take down the fistula, the duodenum is closed by reinforced purse-string suture, or a linear suture, care being taken to prevent stricture of the duodenum. If stricture of the duodenum is likely to occur, a gastroenterostomy is indicated. Remove the gall bladder, and if cholangitis, or one of its complications is present, explore and drain the common duct. The taking down of the fistula will be difficult, because of dense adhesions and sclerotic tissue present, and the closure of the duodenum will call for considerable ingenuity. Remember, one is dealing with an aged person, and only minimal operation procedures are indicated.

#### Case Report

Mrs. W. H. S., aged sixty-two, was first seen in February, 1941, at which time she was complaining of distress after eating, chiefly eructation of gas and a feeling of bloating. She stated that in 1939 she had an operation for a ruptured gall bladder. All that was done at the operation was to drain the abscess. The gall bladder was not removed nor were any stones found. She states that at that time she had a very stormy convalescence with much nausea and emesis. Also she developed phlebitis in her left leg, and this prolonged her hospital stay.

Also in the past history was the story of frequent migraine type of headaches which she had had since her early twenties and that these persisted until 1927 at which time she was cured by three chiropractic treatments. She had malaria and yellow fever as a child. She had an attack of jaundice in 1938, which lasted two or three days only. Her climacteric occurred at fifty-five. She has had five children all living and well.

Examination disclosed a moderately obese elderly woman. Her general condition was good and normal findings predominated except for a moderate sized lump in the left breast which she stated had been present for thirty-five years, an upper right rectus scar containing a ventral hernia in the upper half measuring about three inches in diameter which was not tender. She had some tenderness on deep pressure in the gall-bladder region but no rigidity.

It was my impression at that time that she had a chronic cholecystitis and a very definite tendency toward neurasthenia. She was instructed to decrease the fats in her diet and was given bile salts. She was seen at varying intervals and seemed to be much improved on this therapy.

The patient later came in on January 11, 1943, at which time she was much perturbed regarding the lump in her left breast. It seems that a dear friend had recently expired from a malignancy of the breast. The mass was about the same size as at the previous examination. I advised her to have the tumor removed for biopsy. This she consented to have done in a week or

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so. On January 17, 1943, she consulted another physician regarding the mass and he likewise advised biopsy. That evening she took suddenly ill and vomited all that night and had pain in the right hypochondrium of sudden onset.

has subsided, was that something was closing her stomach and nothing would go by it. After seven days my impression centered more and more on the pylorospasm due to neurasthenia and cancerphobia. However, she was losing ground rapidly and was becoming very weak

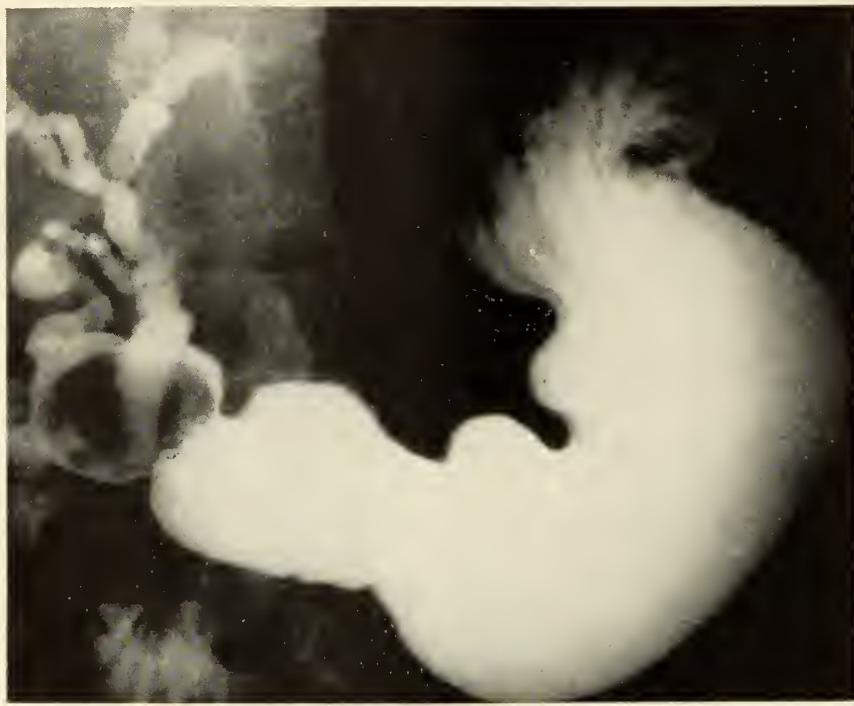


Fig. 1. X-ray taken prior to surgery showing barium in the bile ducts, stomach and duodenum demonstrating the large gallstone partially obstructing the first portion of the duodenum. Cholecystoduodenal fistula is clearly visualized. See figure 3 for anatomical legend.

She was admitted to the hospital on January 18, 1943. She was constantly nauseated and vomited frequently. Her temperature, pulse and respiration were 98, 68 and 16, respectively. Examination disclosed some tenderness in the right upper quadrant of the abdomen with no rigidity and a blood pressure of 180/100, white blood cells 12,000. Otherwise the findings were normal. At that time it was my impression that the following diagnoses should be considered: (1) a gall-bladder attack in view of the past history; (2) pylorospasm resulting from neurasthenia and cancerphobia; (3) intestinal obstruction.

For the next several days the nausea and emesis persisted. Wangenstein suction was attempted several times but she became very unco-operative in this regard and persisted in pulling out the tube. It seemed to give her very little if any relief. The vomitus was always greenish and copious in amounts. She always obtained temporary relief after vomiting. All medicines given to stop the emesis were to no avail. Morphine, H.M.C.s, atropine and belladonna were of only temporary benefit. Sedatives produced no response whatever. During this time the bowels contained fecal material and moved normally or with enemas. There was no abdominal distension or cramping pain. Her chief complaint a day or two after admittance, after the gall-bladder pain

and listless from the constant vomiting in spite of supportive measures.

On January 25, an internist was called in consultation. After his examination it was his opinion that we were dealing probably with a pylorospasm or an upper abdominal obstruction and advised that the obstruction should be ruled out. His impression was much the same as mine regarding the neurasthenic tendency of this individual but the weakness was too alarming to make a definite diagnosis of a hysterical condition, safe.

On January 26, it was decided to definitely rule out an obstruction. Believing that a pylorospasm was present I ordered a flat scout film of the abdomen to be followed by barium by mouth. The order for some reason was not carried out and the barium was given. Figure 1 shows the result obtained. In this roentgenogram the entire biliary tree is clearly outlined. The stone is located in the first portion of the duodenum and the fistula is seen as well as the contracted gall bladder and the bile ducts. No shadows suggesting stones are present in the ducts. Three pictures taken at short intervals show approximately the same condition. Thus the diagnosis was definite and operation was advised immediately.

On the afternoon of January 26 an incision was made in the right upper abdomen, dissecting out the previous scar. Thick dense adhesions were encountered in the

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gall-bladder region and the pyloric end of the stomach. By sharp dissection these were freed and the stomach and duodenum identified. The stone could be easily palpated. It was free and with very little difficulty was passed into the stomach. A small gastrostomy was done

traindicated. However, we had watched this patient for seven days and no signs or symptoms had developed indicating complete bowel obstruction and we were confident that the partial obstruction was high in the intestinal tract. Had the flat scout film been taken I doubt

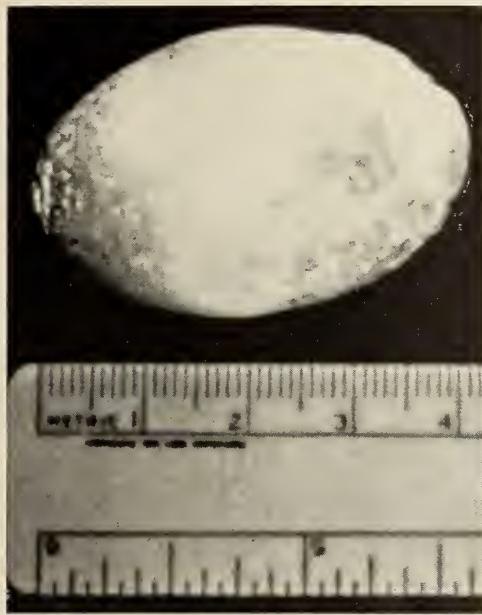


Fig. 2. Large cholesterol stone removed from Mrs. W. H. S. Stone is 42 mm. by 28 mm.

and the stone removed. After closing the gastrostomy, the gall bladder and fistula were explored. No evidence of an acute inflammatory condition existed. Examination of the ducts showed the common duct to be slightly enlarged but no stones could be palpated. Because the roentgenogram did not show anything indicative of stones the common duct was not explored further. The gall bladder was a sclerotic tube about the size of the little finger and funneled out to about three-fourths of an inch at its junction with the duodenum. Because of the dense adhesions and sclerotic tissue present the lumen of the fistula could not be palpated.

The abdomen was closed without drainage and the ventral hernia repaired after excising the sac. Convalescence was uneventful in every respect except that on the eighth postoperative day she had a small stitch abscess. The patient was dismissed on the nineteenth post-operative day. She had recovered from her weakness, had gained in weight and was quite cheerful. She has been seen on several visits to the office and her only complaint seems to be easy fatigability on exertion. Her general health is good with no return of digestive disturbances.

Interesting to note, eight months later this patient developed an adenocarcinoma of the left breast with bleeding from the nipple, not associated with the fibroadenoma previously mentioned, requiring a radical mastectomy and excision of glands in the axilla.

**Comment.**—The giving of barium by mouth in a suspected obstruction was in this case a fortunate mistake. Generally it is conceded that this is definitely con-

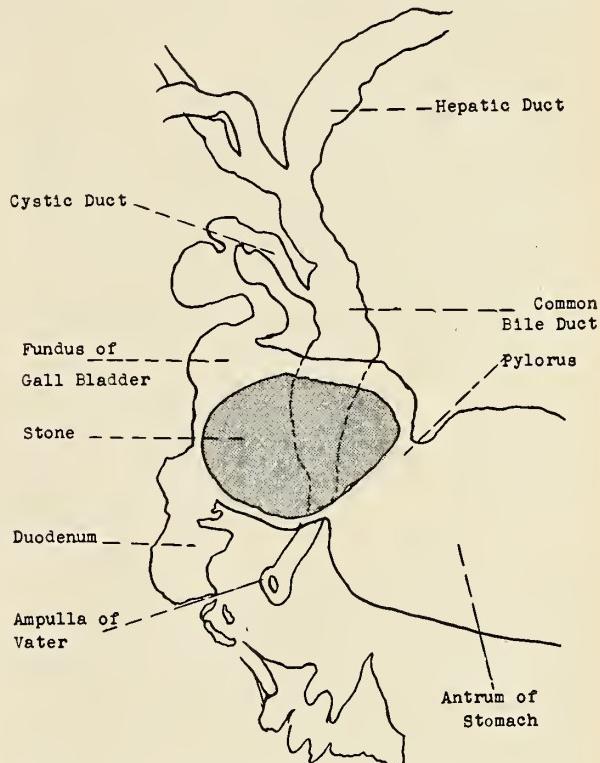


Fig. 3. Cholecystoduodenal fistula. Diagram of x-ray.

if the condition would have been diagnosed, as the stone was not radiopaque, though it is possible air would have been seen in the biliary ducts.

Subsequent recovery bore out the inadvisability of prolonging the operation in a debilitated patient by attempting to close the fistula and doing a cholecystectomy. The repair of the ventral hernia was a matter to be taken into consideration for it consumed more time than the exploration and gastrostomy.

### Summary and Conclusions

1. A brief résumé of the available literature on the incidence, pathogenesis, symptomatology, diagnosis and treatment of cholecystoduodenal fistula has been presented.

2. A case is reported illustrating the salient points of this condition.

3. All persons with chronic cholecystitis with cholelithiasis should be operated upon early before complications have developed. The stones themselves indicate that complications of chronic infection are occurring in the gall bladder and biliary tracts. Early cholecystectomy is the only prophylactic treatment for the prevention of the se-

rious complications of internal biliary fistulae in elderly people, with its resulting high mortality.

4. This condition and its complications should be kept constantly in mind in the differential diagnosis of intra-abdominal conditions arising in elderly people.

### Bibliography

1. Balch, Franklin G., Jr.: Gallstone ileus. New England J. Med., 218:457, (March 17) 1938.
2. Beutel, A.: Carcinomatous cholecystoduodenal fistulas. Roentgenprax., 4:326, 1932.
3. Busi, A.: Radiological findings in two cases of fistula of the gall bladder and duodenum. Radiol. med., 8:122, (Feb.) 1921.
4. Dean, B. O.: Internal biliary fistulas: A discussion of internal biliary fistulas based on twenty-nine cases. Surgery, 5:857-864, (June) 1939.
5. Dickson, D. McK.: Intestinal obstruction due to gallstones. New Zealand M. J., 36:245, (Aug.) 1937.
6. Eliason, E. L., and Stevens, Lloyd W.: Spontaneous internal biliary fistula. Am. J. Surg., 51:387, (Feb.) 1941.
7. Garland, L. H., and Brown, J. M.: Roentgen diagnosis of spontaneous internal biliary fistulae, especially those involving the common duct. Radiology, 38:154-159, (Feb.) 1942.
8. Goldschmidt, W., and Luxisch, D.: A rare case of gallstone ileus. Wiener Med. Wechschr., 87:1216, (Nov. 20) 1937.
9. Henendez, David Orta: Report of a case of biliary ileus. Arch. de la Soc. de Estud. Clin. de la Habana, 35:545, (Aug.) 1939.
10. Hinchee, Paul R.: Gallstone ileus. Arch. Surg., 46:9, (Jan.) 1943.
11. Huet, P.: Biliary ileus. Rev. med. franc., 18:771, (Dec.) 1937.
12. Kielanowski, T. L.: Gallstones as the cause of acute intestinal obstruction. Polska gaz. lek., 14:389, (May 26) 1931.
13. Lahey, F. H.: External and internal biliary fistula following cholecystectomy. Ann. Surg., 92:649, 1930.
14. Okinczyc, J.: Direct transduodenal migration of biliary calculi. Rev. med-chir. d. mal. du foie, 3:199-208, 1928.
15. Pieczarkowski, M.: Acute fatal intestinal occlusion caused by gallstones. Polska gaz. lek., 16:556, (July 4) 1937.
16. Puestow, C. B.: Spontaneous internal biliary fistula. Ann. Surg., 115:1043-1054, (June) 1942.
17. Rigler, Leo G., Borman, C. N., and Noble, John F.: Gallstone obstruction, pathogenesis and roentgen manifestations. J.A.M.A., 117:1753-1759, (Nov. 22) 1941.
18. Taylor, W. B.: Internal biliary fistulae. Canadian M. A. J., 47:332, (Oct.) 1942.

### THE ST. LOUIS COUNTY PROGRAM OF TUBERCULOSIS CONTROL

G. A. HEDBERG, M.D.

Nopeming, Minnesota

THIRTY-FIVE years ago the St. Louis County Sanatorium Commission was created and employed as its first medical superintendent, Dr. Wm. N. Hart, who organized in 1909 the first chest clinics which were held in Duluth. This was the beginning of the outpatient service in St. Louis County. Dr. A. T. Laird succeeded Dr. Hart in 1911, continuing the outpatient work and in 1912 opening Nopeming Sanatorium, the first county institution for tuberculosis in Minnesota. In 1918 Dr. Laird extended the outpatient service and organized the first chest clinics on the Range. In 1919 Dr. H. G. Lampson joined the staff to work on the Range and in rural St. Louis County in tuberculosis control, later continuing this function as county health officer. Until after World War I the means of diagnosis were confined to physical examination, history, sputum examinations and tuberculin testing. Since that time, x-ray inspection has grown to be probably the most important single diagnostic aid. Until 1934 our x-ray facilities were limited to the equipment at the sanatorium and the Duluth hospitals. Since 1934 the facilities of the x-ray laboratories of the Range towns have been extensively used for diagnosis and follow-up of known cases and contacts. Throughout its history, Nopeming Sana-

tatorium and its case finding program has been dependent upon and has enjoyed the fullest support of the medical profession, the Tuberculosis and Health Association, the various health departments and governmental units concerned with the problem of tuberculosis.

St. Louis County is large in area, larger than the State of Connecticut. It has a population of 207,000. It has one large city, Duluth, with a population of 104,000. The remainder of its people live in towns, villages and in mining locations. The rural population is sparse and subsists largely on farms of poor quality. The Range depends mainly on mining. Poor living accommodations, overcrowding and congestion are common. The population was attracted to this county by timbering and mining and has been drawn from European countries in which the incidence of tuberculosis has been high (Finland, the Scandinavian countries, eastern and southern Europe). Extensive immigration has been recent and a large proportion of the population are foreign born, bringing their tuberculosis to this country with them, spreading their disease to their children and to their associates. The incidence of tuberculosis in St. Louis County always has been higher than that of the rest of the State as Table I will show. It will be noted, however, that the rate of decrease in deaths has been greater in St. Louis county than in the state as a whole.

Eleventh Annual John W. Bell Tuberculosis Lecture delivered before the Hennepin County Medical Society at Minneapolis, Minnesota, December 4, 1944.

TABLE I. TUBERCULOSIS DEATH RATE PER 100,000

	Minnesota	St. Louis County
1913	108.6	140.0
1923	76.0	102.4
1933	38.1	47.8
1943	29.6	33.3

The facilities for tuberculosis control in St. Louis County until the fall of 1943 consisted of:

1. The private physician.
2. Nopeming Sanatorium, an institution of 265 beds for the treatment of the discovered case.
3. The Nopeming outpatient department, the function of which is to follow up the discharged case, examine contacts, provide consultation service to physicians, provide for x-ray examinations and conduct chest clinics in Duluth and towns of the county in co-operation with the County, City and Village health departments.
4. The various health departments and their visiting nurses.
5. Clinics for treatment of ambulant pneumothorax cases held at the Nopeming Sanatorium and on the Range.

In spite of our efforts in case finding we have always been impressed by the number of new patients admitted each year in whom careful history failed to reveal a known source of infection. This was especially emphasized by the reports from the induction centers which showed that among St. Louis County men disqualified for military service by reason of discovery of a tuberculous lesion, over 60 per cent were previously unknown either to Nopeming or any other tuberculosis case finding agency. These cases would not have been discovered until symptoms would have brought them to their physicians in advanced stages of the disease. In spite of a rather efficient system of contact examinations, the majority of new cases referred by physicians likewise failed to reveal a known source of infection.

Tuberculin testing had been used in the various school systems extensively enough to prove that in the St. Louis County area this program yielded few new cases. In 1937 and 1939 four townships were surveyed en masse by means of tuberculin testing and x-ray examination of all positive reactors. This was one of the first community surveys reported in this country. A total of 1,362 were examined, composing 88 per cent of the population of these communities. Of this number, 7 or 0.5 per cent were discovered to have active tuberculosis. Yet, the essential lesson learned

was that this was a time-consuming, expensive method of case finding and could hardly be applied without extensive increase in personnel. It also taught us that large groups of adults required a great deal more "selling" to accept a tuberculin test than an x-ray examination.

Some new method of mass examination was felt to be necessary if the eventual eradication of tuberculosis in St. Louis County was to be accomplished. In 1940 Nopeming was provided with a photofluorographic camera taking 4 x 5 inch miniature films. For two years we studied the results of examination by this method as compared to the 14 x 17 inch standard chest x-ray. We became satisfied that this was a practical method of "screening" out cases of pulmonary pathology for further clinical and roentgenological study. In the meantime, the medical profession and the Tuberculosis and Health Association were informed of this new method of x-ray screening.

In 1942 the Tuberculosis and Health Association decided to provide us with a mobile x-ray unit embodying this photo-roentgen camera to be used in an intensified campaign of case finding. Through the sale of Christmas seals the funds for purchase were raised and we were told to plan on delivery of the unit in the summer of 1943.

It was realized that any extensive program of tuberculosis case finding required the support of the entire county. For this reason an Advisory Committee on Tuberculosis was formed composed of representatives of the medical profession, health organizations, governmental units and laymen particularly interested in the problem. This committee has aided greatly in formulating the policies and program of tuberculosis control. After thorough study of the various procedures employed in case finding it was decided that only the most practical and efficient means be retained. Re-duplicating procedures were discovered and eliminated. Among the major items dropped were the chest clinics held on the Range. Instead, the local physicians were urged to make the necessary examinations, with Nopeming providing for x-ray examinations when the patient could not afford the expense. The outpatient department under Dr. R. J. Davies intensified the work in contact follow-up using the full facilities of the health departments and their visiting nurses, as well as our own staff. While awaiting delivery of the mobile x-ray unit, plans

TABLE II. FINDINGS BY GROUPS

	Number	Per Cent Significant Tuberculosis	Per Cent Active Tuberculosis
Industrial	5,418	1.7	0.15
Business	1,787	1.8	0.2
Schools	9,141	0.3	0.04
Communities	16,870	2.4	0.09*

\*The thirty cases considered suspicious are largely from this group.

for its operation were formulated. It was hoped that the method of examination would prove that a sustained program of periodic chest examinations of the entire county would be feasible.

The operation of the mobile unit began in September, 1943, and to date over 45,000 individuals have been examined. All films indicative of pulmonary pathology have been rechecked by standard roentgenograms taken at the local x-ray laboratories and sent to Nopeming for interpretation. In all cases in which a presumptive diagnosis of tuberculosis has been made, further investigation as to the activity of a lesion is made in co-operation with the family physician. All such cases will be carried on the files of our outpatient department for continued follow-up irrespective of whether the lesions may be active or inactive at the present time. Dr. Davies has recently reported the results of the first year's work in which slightly over 34,000 persons were examined. In brief, the results of these examinations were as follows:

Significant tuberculosis.....	579 (1.7 per cent)
Cases admitted .....	40 (12 proved inactive)
Considered active.....	8
(not yet admitted)	
Total cases proved active...	36 (0.1 per cent)

In addition, thirty cases have not yet been completely studied but are believed to be active.

Cardiac abnormalities occurred in about 2 per cent. Dextrocardia was found three times in the first year's results and one time since (in over 45,000).

Tumors were diagnosed in sixteen cases. Three of these were very probably bronchogenic carcinoma.

Table II illustrates the findings by groups. In community surveys during the first year 81.8 per cent of the groups had miniature films. In addition 6.5 per cent had recent x-rays totalling 89.3 per cent.

The essential points in the program to be emphasized are, first, that the means of examination

has been brought to the people. In the case of community surveys the area has been divided so that no one had to go more than two blocks to be x-rayed. Second, the examinations, together with the necessary retakes with standard x-rays, have been made without charge—the cost being borne mainly through the tuberculosis tax levy subsidized by funds from the Christmas seal sale. Third, the organization of the surveys has been the responsibility of the locality to be examined. The importance of this condition cannot be over-emphasized. In this way we feel that it has become more difficult for the individual to refuse than to accept an examination.

A description of the type of equipment used in our Mobile Unit might be of interest. An x-ray apparatus of 200 milliamperes capacity is powered by a gasoline generator housed separately in a trailer. Due to the variation of line facilities we felt that our unit should be independently powered. The recording unit is a 4 x 5 inch photofluorographic camera equipped with a Lys-holm grid, which, by eliminating secondary radiations produces a much sharper image. This equipment is housed in a large truck and the examinations are made within it. Most of the exposures are made from 90 to 100 kilovolts at 1/5 to 1/2 second. During our original study with the photofluorographic unit we found that the time of exposure was not important and that exposures made at 200 milliamperes at 1/5 to 1/2 second could rarely be distinguished from exposures made with 400 milliamperes using one-half the time. We have preferred the 4 x 5 inch film to the 35 mm. film as the larger film does not have to be magnified for interpretation. On the other hand, the smaller film, being on a roll, requires less handling. Recent work done by Morgan and reported by Hilleboe has demonstrated the following resolving power of various x-ray media:

Standard 14 x 17 x-ray.....	100
Miniature film 4 x 5 inch.....	40
Miniature film 70 mm.....	40
14 x 17 paper film.....	30
Miniature film 35 mm.....	20
Fluoroscopy .....	8

Using the above criteria it is probable that the 70 mm. roll film will eventually be most universally used. We hope to equip our unit with a photo-timer in the near future. There is no question but that there will be many improvements

in equipment for photofluorography in the near future as the work of the U. S. Public Health Service and of the armed forces has proved this method of case finding to be practical.

The effect of our accelerated case finding program in St. Louis County is partly illustrated in Table III.

The physicians remain the greatest single referring source of new patients. Their group of patients continue to demonstrate the known fact that by the time the patient seeks medical advice the disease has become advanced. In 1942, of the 110 cases admitted by physicians, only three were minimal. In the past year, of 116 cases, eight were minimal. The intensified work in the outpatient departments, including the mobile x-ray survey, has markedly increased our patient load. Instead of increasing vacancies at the Sanatorium we are now faced with a shortage of beds. Fortunately the greatest number of new admissions are requiring less time to bring their disease under control. The increased number of readmissions not only reflects the more active follow-up measures but emphasizes the need for better rehabilitation and economic adjustments in order to allow an arrested case of tuberculosis a greater chance to maintain control of this disease. It is encouraging to realize that Dr. Hilleboe is considering this very important phase in tuberculosis control in the program of the Division of Tuberculosis of the U. S. Public Health Service.

The experiences gained in our program of tuberculosis control and the support we have had from the medical profession and the public, have led us to the following plans as to the St. Louis County Program of Tuberculosis Control for the future:

- Continued intensification of our examination of contacts through the family physician and our outpatient facilities, including the health departments.

- More thorough control of our discharged patients with special emphasis on aid in rehabilitation and economic adjustment, which in our experience, as well as of others, is the greatest cause of reactivation of pulmonary tuberculosis. This phase of tuberculosis control is the weakest plank in the platform developed for St. Louis County.

- Sustained periodic photofluorographic screening of the population of St. Louis County. To this end we are being provided with a second mobile unit through the sale of Christmas seals.

- Routine chest examinations of general hospital admissions. We believe that photofluorography is a practical and economic method of discovering cases on whom further x-ray and clinical examinations should be made

TABLE III. ANALYSIS OF ADMISSIONS TO NOPEMING SANATORIUM

	1942	Nov. 1, 1943 to Nov. 1, 1944
Referred by physician	110	116
Referred by Selective Service	22	13
Contact through O. P. Department:		
Letter or visit	33	25
Chest clinics	28	19
Mobile x-ray examination	—	47
Transfers	4	5
Readmissions through O. P. follow-up	59	78
Total	256	303

to determine the presence or absence of clinical tuberculosis and other chest pathology. Hilleboe has reported that up to 7 per cent of general hospital admissions have been found to have significant chest findings. In the hopes of uncovering this source, our program contemplates provision of photofluorographic units for at least two of the larger hospitals in our county.

5. Frequent re-examination of groups in which the incidence of tuberculosis is known to be high.

The development of collapse therapy with its surgical procedures has done much to secure arrest in patients afflicted with tuberculosis. In the foreseeable future, the application of this type of treatment has probably reached its maximum. The barriers preventing adequate hospitalization for the active case of tuberculosis have been largely removed in our county. Yet, the number of persons unknowingly spreading tuberculosis still is large. It seems to us that the only hope in eventually eradicating tuberculosis is in the more complete search for the unknown case and in the more complete control of the patient with arrested tuberculosis. In the four townships surveyed by Mantoux test in 1937 and 1939, the active cases were treated at the Sanatorium and together with all other cases of apparently inactive tuberculosis have been followed by repeated examinations. This year these same townships were examined by our mobile unit. It is significant to us that not one new case of tuberculosis was found.

#### References

- Davies, R.: Complete community surveys for tuberculosis. *Journal-Lancet*, 61:113-114, (April) 1941.
- Davies, R., Hedberg, G. A., and Fischer, M. McC.: Summary of "The St. Louis County Survey" reported by Dr. Davies at the meeting of the Minnesota Trudeau Medical Society at St. Paul, Minnesota, November 3, 1944.
- Davies, R., and Robb, C. S.: Community survey for tuberculosis. *Am. Rev. Tuberc.*, 44:118-121, (July) 1941.
- Davies, R., and Sherer, C. A.: Tuberculosis survey of an entire community. *Am. Rev. Tuberc.*, 39:778-781, (June) 1939.
- Hilleboe, H. E.: Speech before Southern Chapter of American College of Chest Physicians at St. Louis, Mo., November 13, 1944.

## SPREADING OSTEOMYELITIS OF THE MAXILLA

OLAV E. HALLBERG, M.D.

Rochester, Minnesota

THREE clinical types of osteomyelitis of the maxillary and frontal bones are recognized. These are: (1) the fulminating type, (2) the localizing type and (3) the spreading type.

The fulminating type of osteomyelitis is encountered most often in the frontal bone and usually develops after swimming. It is characterized by intense frontal pain, high temperature, edema over the forehead and a tendency to spread to the intracranial sinuses and meninges.

The localizing type of osteomyelitis, after an initial advance, becomes isolated by reactive barriers. If the localizing character of the condition is recognized, surgical intervention is not undertaken until the infection has become walled off and sequestration has taken place. *Staphylococcus aureus* is probably the offender.

In the spreading type of osteomyelitis there is enough resistance to prevent rapid advance but no tendency to complete localization. Therefore, in any case of osteomyelitis of the maxillary or frontal bone, surgical intervention should be deferred for a reasonable length of time to see whether a tendency to localization exists.

Spreading osteomyelitis of the maxilla, which usually develops after minor surgical procedures in the nasal region, is dreaded by all physicians who treat diseases of the sinuses. In most cases in which this complicating condition occurs there seems to be a basic allergy of the nasal passages with superimposed chronic infection. The first investigative work concerning the cause of spreading osteomyelitis was reported in 1937 by Williams and Heilman.<sup>2</sup> They discussed spreading osteomyelitis of the frontal bone secondary to disease of the frontal sinus and reported two cases in which an anaerobic type of streptococcus was isolated from the sinuses by culture. Their observations later were confirmed by Galloway.<sup>1</sup> It now seems probable that spreading osteomyelitis of the facial and frontal bones is caused by an anaerobic or micro-aerophilic streptococcus.

In the following two cases, penicillin was used

in conjunction with operation in the treatment of spreading osteomyelitis of the maxilla.

### Report of Cases

*Case 1.*—A girl, nineteen years of age, came to the clinic on November 18, 1943. She had been in a car accident on September 23, in which she had struck the right side of her face against something. Chills had occurred on the first day after the accident and high temperature on the second day. She was hospitalized elsewhere for five weeks, during which time multiple discharging sinuses in the right cheek developed.

On examination at the clinic the whole cheek was markedly swollen. There were multiple draining sinuses below the right malar bone and also much thick pus in the right middle meatus. Roentgenograms of the sinuses revealed considerable cloudiness on the right side with destruction of practically the entire right maxilla. A radical operation on the antrum was advised but this was postponed because of the presence of severe acute infection of the upper part of the respiratory tract.

The patient returned on December 22. The swelling over the right maxilla had increased and the teeth on the right side were movable. An incision in the upper buccal fold on the right side exposed the canine fossa. The maxilla was markedly decalcified. Since sequestration of almost the entire alveolar process had occurred, it as well as the teeth had to be removed. The fistulas in the cheek led into the antrum which was filled with foul pus and loose bony sequestra. The fistulous tracts were curetted. Because of sequestration, practically the whole outer wall of the sinus had to be removed. A large window then was made into the nose. Cultures revealed an anaerobic type of streptococcus.

On the suggestion of Dr. W. E. Herrell of the Division of Medicine, the administration of penicillin, 40,000 Oxford units daily, was begun and continued for nine days. The patient made an uneventful recovery and was dismissed from the hospital on January 5, 1944, fifteen days after operation. When she was last seen, on March 11, the infection had entirely disappeared. Plastic correction of the scars will be undertaken but at the time of preparation of this report in October, 1944, the plan was to defer this for about two months.

*Case 2.*—A man, fifty-nine years of age, came to the clinic on December 28, 1943. Less than a year previously he had had an operation for a "cyst" in the left antrum. More definite information concerning the condition was not available. Since then the swelling and tenderness of the left cheek had increased. During the last month, much pain, especially at night, had been present.

On examination the whole left maxillary region was so swollen and tender that the upper dental plate could

From the Section on Otolaryngology and Rhinology, Mayo Clinic, Rochester, Minnesota. Read before the meeting of the Minnesota State Medical Association, Rochester, Minnesota, April 13, 1944.

not be used. There was no pus in the nose. Roentgenograms of the sinuses showed marked cloudiness of the left antrum with possible destruction of the posterior and medial walls.

Radical operation on the left antrum was undertaken on January 3, 1944. The incision was carried through the old scar underneath the left side of the upper lip. The maxilla, which apparently was completely decalcified, had the consistency of rubber. Most of the anterior wall of the left antrum was removed. The antrum was markedly diseased and contained four small bony sequestra. Mucous membrane almost filled the cavity. The medial wall of the antrum also had to be removed. Diseased ethmoid cells of the posterior group also were opened through the antrum.

My suspicion concerning the presence of an anaerobic type of streptococcus was confirmed by Dr. F. R. Heilman of the Department of Experimental Bacteriology. The administration of penicillin, 40,000 Oxford units daily, was begun and continued for ten days.

The patient made an uneventful recovery and was dismissed from the hospital on the fourteenth day. He was cared for as an out-patient for a few days and on dismissal on January 27, the antrum was completely dry.

### Comment

The high mortality that followed surgical procedures in cases of spreading osteomyelitis indi-

cated that operation alone was not sufficient to combat the infection. In December, 1943, Williams and Nichols<sup>3</sup> reported the first two cases of spreading osteomyelitis of the frontal bone in which penicillin had been used. The result in each case was a complete cure. However, it might be well to stress that penicillin alone will not effect a permanent cure in cases of spreading osteomyelitis of the maxilla. The principal reason for this is that the drug has no access to bacteria within the sequestra. The use of penicillin in connection with whatever surgical procedure is indicated, in my opinion, has solved in large measure one of the most trying conditions in rhinologic practice.

### References

1. Galloway, T. C.: Infections with anaerobic streptococci with special reference to cranial osteomyelitis. *Tr. Am. Laryng. A.*, 64:35-51, 1942.
2. Williams, H. L., and Heilman, F. R.: Spreading osteomyelitis of the frontal bone secondary to disease of the frontal sinus. *Arch. Otolaryng.*, 25:196-207, (Feb.) 1937.
3. Williams, H. L., and Nichols, D. R.: Spreading osteomyelitis of the frontal bone treated with penicillin. *Proc. Staff Meet., Mayo Clin.*, 18:467-469, (Dec. 1) 1943.

### ACUTE OSTEOMYELITIS—CLOSED TREATMENT

In bygone years acute osteomyelitis was treated surgically as soon as the diagnosis was made, and the infected area was widely explored. In contradistinction to this older viewpoint, which still exists in many quarters<sup>1,2</sup>, a new school has risen which has adopted dilatory tactics.<sup>2</sup> In their hands a trial period of five to ten days is made, during which it is hoped the bone infection may localize, and then can be drained with greater ease and safety and better conservation of the bone. The advent of remarkable therapeutic agents, such as penicillin and the sulfa drugs, has led to further modification of the treatment of acute osteomyelitis so that its threat as a surgical emergency is waning.

The modern objective in overcoming infection is the destruction of the causative agent. The secondary injury caused by the invading organism can then be best repaired. Acute osteomyelitis is a disease which readily lends itself to these principles, for it is a general infection with localization in bone, caused most commonly by the *staphylococcus aureus*, or other cocci which are amenable to specific therapy. A group of surgeons<sup>3</sup> has

subjected a series of patients with acute osteomyelitis to this medical point of view with unorthodox results. Supportive measures such as transfusion, infusions, serum, and vitamin and dietotherapy were also liberally used. Fifty-six patients were treated under this regime, with surgical intervention as a major variation. Thirty underwent incision and drainage operations in the customary fashion, and 26 were treated without drainage but had aspiration, largely for diagnostic purposes. Twenty-one of 30 patients treated by drainage had lingering, draining sinuses, while but 9 healed completely. Of the 26 cases treated medically 21 healed without sinus formation. There was only one death in the entire group. It is clear that the morbidity can be reduced if surgical drainage is not universally employed in the treatment of acute osteomyelitis.

Acute osteomyelitis is undergoing constant therapeutic revision, as are all diseases whose causative agent is susceptible to the action of penicillin and sulfa drugs. It may well be that the early institution of such therapy by eradicating the general septic features of such diseases will permit the local manifestation to heal spontaneously or with a modicum of surgery. Like empyema, acute osteomyelitis promises, at least in many cases, to fall in the category of combined operations—by internist and surgeon—the methods of one or the other or both successfully prevailing.—Editorial, *New York State J. Med.*, 44:2682, (Dec. 15) 1944.

1. Handfield-Jones, R. M., and Porritt, A.: *Essentials of Modern Surgery*, E. and S. Livingston, Edinburgh, 1943, p. 1020.  
 2. Christopher, F.: *Text Book of Surgery*, 3rd Ed., W. B. Saunders Co., 1942, p. 566.  
 3. Baker, L., Schaubel, H., and Kuhn, H. H.: *J. Bone & Joint Surg.*, 26:345 (April) 1944.

# PEDIATRIC-PATHOLOGICAL CONFERENCE

DULUTH PEDIATRIC SOCIETY  
O. W. Rowe, President

ST. LUKE'S HOSPITAL  
Arthur H. Wells, Pathologist

## EPIDERMOLYSIS BULLOSA IN A NEWBORN

C. H. SCHRODER, M.D. and A. H. WELLS, M.D.

DR. C. H. SCHRODER: I wish to report today a rare case of congenital skin defect. Through the courtesy of Dr. A. J. Spang, I had the opportunity to see a male infant born on January 20, 1944. The weight was 6 pounds 6 ounces and he measured 46 cm. in length. He was well developed and presented no pathology except that of the skin and mucous membranes.

Labor in this case was uneventful and the baby cried spontaneously. It was the second child of this mother. Her first-born is now nine years old but was not of this father. He has had eczema since birth. The mother's sister has ichthyosis. The father's fingertips crack easily in the winter.

The mother's history should be mentioned. She had two incomplete abortions in 1939 for which she was curedtted. In February, 1943, she underwent a laparotomy but no pathologic changes were found. There is no history of syphilis. A number of Wassermann tests and one Kline test have been found negative. She bled a little during this pregnancy up to the sixth month. She had received a series of injections of progesterone.

Now for a description of the infant. The scalp and hair were normal. The eyes and ears were negative. The lips were inflamed and desquamating. The epidermis on the tip of the nose was rubbed off leaving a small raw area. There were many small maculopapular lesions under the chin which became bullous the day before death.

The mucous membrane of the tongue, palate, cheeks and pharynx was intensely red and showed many petechial hemorrhages. There was a thick purulent exudate over the gums. Cultures of this pus showed many colonies of nonhemolytic streptococci and also colonies of *B. coli*.

The fingers and palms of both hands had maceration and desquamation. Over the backs of the hands large bullae spread to involve almost the entire dorsal aspect. Sero-hemorrhagic contents were noted. There were also large bullae over the back of the right arm. Fingernails were atrophic.

Most of the skin was apparently missing from the right foot. There was only a narrow band of skin over the outer third of the sole. The defect extended up the right leg in a pointed shape to an area a little more than one-third of the distance of the tibia. The left foot and leg was much worse. Here the skin was apparently missing over the entire foot (except for two



Fig. 1. Atrophy of epidermis, corium and subcutaneous tissues, parakeratosis, separation of stratum corneum, atrophy of rete malpighii, slight hyaline changes in corium, atrophy of hair follicles and cystic degeneration of sebaceous glands.

toes) and also apparently entirely missing over the leg (except for a narrow strip on the outer aspect) up to a point well above the knee. The skin at the margins of these defective areas was sharply delineated. The appearance was not that of gangrene or infection. Where the skin was missing, the base was clean and of the color of raw ham. Apparently the skin tissues were reduced to a thin, transparent membrane over the muscles and fascia. Nevertheless, the motion of feet and legs was unimpaired. Toenails were completely missing except on the four toes with more normal appearing skin and these were atrophic. As far as the trunk was concerned the lesions noted were scattered, small and medium sized bullae. There were some fine petechial hemorrhages here and there.

The infant lived five days during which time the bullae tended to become larger and more numerous.

They were located on the dorsum of hands, elbows, buttocks, mouth, chin, dorsum of arms, over the scapula and later on the lower abdomen. There was frequent oozing of blood from the various lesions es-

#### Discussion

DR. C. H. SCHRODER: It would seem reasonable to conclude that there are two distinct processes here. The pathological process present in the feet and legs is a



Fig. 2. Congenital epidermal defect from Rogatz and Davidson.

pecially when the ammoniated mercury dressings were removed. The child cried whenever touched. He took his feedings fairly well but gradually became weaker. Nicotinic acid 1.5 mg. and percomorph oil drops 2 were given daily. There was a low-grade fever beginning the second day which suddenly rose to 105.2° F. during the last twenty-four hours.

#### Autopsy

DR. A. H. WELLS: This newborn white male infant was found to have a remarkable skin dyscrasia and a terminal bronchopneumonia with toxic changes in the visceral organs. He measured 47 cm. long and weighed 2010 grams. The gross appearance and distribution of the skin lesions has been described by Dr. Schroder. Histological studies of the skin (Fig. 1) revealed a severe atrophy of the epidermis, corium and subcutaneous tissues in the lesions of the elbows, hands and feet. Skin from the other areas of the body had mild, similar atrophic changes. All sections of skin, irrespective of origin, revealed parakeratosis, hyperkeratosis, separation of stratum corneum, atrophy of rete malpighii, slight hyaline changes in the corium, cystic degeneration of sebaceous glands, and atrophy of hair follicles. The sweat glands appeared normal except for an apparent increase in number due to atrophy of other skin structures. Elastic fibers were concentrated and apparently more numerous in all layers in the more atrophic skin sections.

There was a patchy bronchopneumonia and mild toxic changes in the myocardium, liver, spleen, and kidneys. A postmortem blood culture contained *B. coli* communior. Cultures from the right elbow vesicle revealed *staphylococcus albus*. The latter was considered a contaminant.

marked example of "Congenital Defect of the Skin." Only recently Rogatz has described what is probably the most extensive case of this type on record. Since I was disappointed in not obtaining good pictures of this case, I call your attention to the illustrations (Fig. 2) from Rogatz' article in the *American Journal of Diseases of Children*, June, 1943. Most of the 125 cases of this type on record involve only small defects of the scalp. In the Rogatz case, however, the lesions in the lower extremity were strikingly like these I have described and are referred to by the author in this apt description: "The hands and feet looked strikingly as if they were covered with rubber gloves." His case died on the second day. He gives a good description of the skin pathology and a very extensive bibliography, especially of foreign references.

There is, however, a special problem posed in the present case. What relation, if any, do the extensive bullous lesions bear to the severe defects in the feet and legs? That the condition known as epidermolysis bullosa was present here, is certain. The epidermis could be rubbed off anywhere with little pressure, and the raw tip of the nose, the raw fingers and palms and numerous bullae all support this diagnosis. The infection of the skin and mucous membranes is part and parcel of this process.

It would seem difficult, however, to connect the deep destruction of the skin of the feet and legs with this superficial epidermal lesion. One might argue, I suppose, that the infectious condition might have been going on a long time before birth and that a deeper destruction might then occur. But for my part, I think it more logical to assume that the two conditions are really distinct. In the feet and legs we are dealing with a true formative defect of the cutis and sub-

## PEDIATRIC-PATHOLOGICAL CONFERENCE

cuticular tissue. In the rest of the skin and in the mucous membranes we have a bullous impetiginous infection which is present only by coincidence.

The condition known as hereditary ectodermal dysplasia was also considered here. This is a familial nonsex-linked condition which, besides defects in the skin and mucous membranes, shows defects in the hair, nails and all the ectodermal structures including nervous system and adrenals. However, the physical signs and autopsy findings did not support this diagnosis.

DR. A. H. WELLS: I agree with Dr. Schroder that this is a case of epidermolysis bullosa but I do not agree that there is a second skin disease known as congenital epidermal defect. Knoky and Sutton<sup>7</sup> and Garland<sup>5</sup> report cases of epidermolysis bullosa in the newborn with atrophic changes in the skin of the hands or feet similar to our case. Where the histology is discussed there is general agreement in the literature that atrophic changes in the skin are to be expected in this disease. Since the hands and feet are the most likely fetal parts to be traumatized in utero one might well expect these changes of the skin of the hands and feet of a newborn with this condition.

On the other hand no cystic disease of the skin is to be found in the excellent review of cases of congenital epidermal defect by Abt<sup>1</sup> or in the cases of Campbell<sup>3</sup>, Dowler<sup>4</sup>, and Rogatz and Davidson.<sup>11</sup> The remainder of the skin is entirely normal in these infants. Abt describes the histogenesis as a failure of development of epithelial structures, smooth muscle and adipose tissue of the skin and not an atrophy or degeneration of these structures in congenital epidermal defect.

Ormsby and Montgomery<sup>10</sup> define epidermolysis bullosa as a rare affection of the skin in which vesicles or bullae are produced by slight traumatism. There is no known etiology. In some cases a hereditary tendency is obvious. The major number of cases begin shortly after birth. The disorder lasts for many years or a lifetime. When the vesicles occur on the hands or feet there may be some interference with work. The location of vesicles at the sites of possible trauma

without other apparent cause is generally the first clue as to the clinical diagnosis.

McCarthy<sup>9</sup> claims that there is no pathognomonic histology of epidermolysis bullosa. A variety of microscopic changes are described by different authors. Two forms are frequently described: a mild type similar to the cases of Calhoun and Brown<sup>2</sup>, Guy<sup>6</sup> and Kierland and Harrison<sup>8</sup> and a more severe or dystrophic form like the one we have described where the mucous membranes and large areas of skin are involved with atrophic changes. The vesicles occur in any of the stratum of the epidermis and in the more severe cases are subepidermal. Parakeratosis, atrophic epidermis and cysts derived from sweat or sebaceous glands have been frequently described. A few authors have described a decrease of elastic fibers in the pars papillaris. Others found no such change.

### Summary

A newborn infant with remarkable bullus and atrophic changes in the skin has been described as a case of epidermolysis bullosa. A differentiation of the atrophic changes from congenital epidermal defect is argued. As near as could be determined bronchopneumonia and possible septicemia were the immediate cause of death.

### References

1. Abt, Isaac A.: Congenital skin defects. *Am. J. Dis. Child.*, 14:113-121, 1917.
2. Calhoun, T. J., and Brown, W. P.: Epidermolysis bullosa. *Arch. Derm. & Syph.*, 2:183-185, (Feb.) 1925.
3. Campbell, W.: Case of congenital ulcer on the cranium of a fetus. *Edinburgh J. M. Sc.*, 2:82, 1926.
4. Dowler, V. B.: Congenital defect of the skin in a newborn. *Am. J. Dis. Child.*, 44:1279-1284, 1932.
5. Garland, Joseph: Epidermolysis bullosa: report of a case with lesion present at birth. *J.A.M.A.*, 93:918, (Sept. 21) 1929.
6. Guy, W. H.: Epidermolysis bullosa. *Arch. Derm. & Syph.*, 15:30-42, (Jan.) 1927.
7. Kanoky, J. P., and Sutton, R. L.: Epidermolysis bullosa congenita. *J.A.M.A.*, 54:1137-1140, (April 2) 1910.
8. Kierland, R. R., and Harrison, M. W.: Epidermolysis bullosa with unusual distribution and elevated urinary porphyrins: report of a case. *Staff Meetings of the Mayo Clinic*, 15:313-316, (May 15) 1940.
9. McCarthy, Lee: *Histopathology of Skin Diseases*, p. 159. St. Louis: C. V. Mosby Co., 1931.
10. Ormsby, O. S., and Montgomery, H.: Diseases of the Skin, 6th Ed. p. 432. Philadelphia: Lea and Febiger, 1943.
11. Rogatz, J. L., and Davidson, H. R.: Congenital defect of the skin in a newborn infant. *Am. J. Dis. Child.*, 65:916, (June) 1943.

## COLONEL MENNINGER DISCUSSES NEUROPSYCHIATRIC CASUALTIES

Speaking before the meeting of the Association for Research in Nervous and Mental Diseases, in New York, December 15, Colonel W. C. Menninger, MC, Chief Consultant in Neuropsychiatry, Office of The Surgeon General, discussed the problem of the discharged neuropsychiatric patient.

Declaring that the problem facing the individual and communities is unquestionably of great magnitude, Colonel Menninger said that "the statisticians' figures of the number of such men is prone to be interpreted as indicating a much more alarming state of affairs than actually exists."

Colonel Menninger pointed out that neuropsychiatric casualties of the last war were extremely expensive, in manpower and money. He asked the co-operation of the association in debunking misconceptions about the neuropsychiatric and educating the public concerning the problems involved. "We should provide counsel and advice to our federal, state and community leaders in the development of a plan for this group," he said, and concluded with the words, "We as physicians, and particularly as psychiatrists, have probably the greatest responsibility in helping GI Joe with a neuropsychiatric diagnosis readjust to his civilian life, and his civilian community to adjust to him."—Office of the Surgeon General, December 15, 1944.

# CLINICAL-PATHOLOGICAL CONFERENCE

ST. LUKE'S HOSPITAL—DULUTH

S. N. Litman, M.D., and Arthur H. Wells, M.D.

## RH FACTOR TRANSFUSION REACTION AND TRANSFUSION REACTION INSTRUCTIONS

RALPH J. ECKMAN, M.D., and ARTHUR H. WELLS, M.D.

DR. R. J. ECKMAN: Recently it was my privilege to deliver a set of triplets; the first such multiple pregnancy in my experience, and probably the last. Despite the fact that I was sufficiently keen to definitely suspect erythroblastosis fetalis in the babies at the time of birth I was not sufficiently aware of the danger of producing a severe transfusion reaction in the mother by giving Rh positive blood. Consequently when excessive bleeding was encountered, a transfusion of properly crossmatched and typed blood was given; but blood which was not typed as to Rh factor. A very severe hemolytic transfusion reaction occurred in the mother. Fortunately, she was of the 50 per cent who recover from these reactions. The case is of sufficient interest to warrant reporting in some detail at this conference.

### Case Report

Mrs. J. A. J., a twenty-five-year-old housewife, gravida V, was admitted to St. Mary's Hospital in labor. Her first and second pregnancies had resulted in living full-term babies. Her third and fourth pregnancies had resulted in stillbirths at nine and eight months, respectively. By x-ray examination prior to onset of labor, it was known that the present pregnancy consisted of triplets. The patient was at term and had had no complications of pregnancy. The physical examination was normal except for the unusually large and pendulous abdomen. Labor was rapid and spontaneous delivery of a frank breech female weighing 2,290 grams, was followed in thirteen minutes by spontaneous delivery of a frank breech male weighing 2,115 grams. The second baby had an icteric tint and some edema which made the tentative diagnosis of erythroblastosis fetalis quite plausible. Nineteen minutes after the birth of the second baby, excessive bleeding was encountered and the placenta started to present. At this time 500 c.c. of group A blood which had been crossmatched satisfactorily 24 hours previously was given. Manual extraction of the placenta was done; followed by immediate internal version and breech extraction of the third baby, a female weighing 1,690 grams which was presenting as a shoulder. The blood was given in approximately ninety minutes and even before it had all been administered, the patient started to complain of considerable low back pain. She was returned to her room in apparently good condition but one and one-half hours afterwards experienced a severe transfusion reaction. This was char-

acterized by increase in low back pain, despite morphine, a chill, restlessness, dyspnea, deep cyanosis and fall in blood pressure from 145/75 to 78/40. The patient looked very seriously ill. Adrenalin was administered; two units of plasma given; external heat applied; oxygen by B.L.B. mask started; and the patient was placed in Trendelenburg position. Forty-five minutes later the blood pressure was 110/72 and cyanosis had markedly lessened. The temperature had risen to 101.6°.

The mother was immediately tested and found to be Rh negative. The father and three babies were Rh positive. The mother's blood was set up with red blood cells from ten adults and her serum did not agglutinate any of them. She had no demonstrable agglutinins for Rh positive cells. A recheck of the crossmatch found that there was no agglutination between the donor and recipient's blood. The patient developed oliguria; only 90 c.c. of brownish red urine in twenty-four hours were obtained by catheter. It was concluded that the patient had a hemolytic transfusion reaction as a result of giving Rh positive blood to a mother sensitized to this blood after giving birth to triplets with erythroblastosis fetalis.

Intensive therapy was continued in an effort to prevent formation of acid hematin in the renal tubules. This consisted of 500 c.c. of Hartman's solution of hypodermoclysis; oral administration of soda bicarbonate 3 grams four times daily; and maintenance of fluid intake between 5,000 and 6,000 c.c. daily for the next week.

In spite of the urinary output which rose from 280 c.c. the first day to 3,000 and 4,000 c.c. on subsequent days, there developed a blood urea nitrogen of 51 mgs. per cent and a creatinine of 5 mgs. per cent on the second postpartum day. This rose to a high of 66 mgs. per cent and 5 mgs. per cent, respectively, on the fifth postpartum day; but gradually fell to a blood urea nitrogen of 24.5 mgs. per cent and creatinine of 1.8 mgs. per cent on the fifteenth postpartum day. The urine showed a grade 4 albumin with many granular casts on the first postpartum day. The P.S.P. was 30 per cent in two hours and the urea clearance 48.5 per cent. The icterus index was 8.4 units.

With general premature care and blood transfusions of 20, 30 and 0 c.c. of Rh negative blood, respectively, the three babies died on their third day; second day; and first day, respectively. The firstborn showed no abnormal elevation of erythroblasts during her three days.

She had 3,110,000 red blood cells, hemoglobin 9.2 grams, 30,000 white blood cells and 3.8 per cent erythroblasts. The second showed 20.5 per cent erythroblasts on the second day; but no counts were made on the third baby due to her poor condition and early death. All of the babies became intensely icteric before death. Dr. George Berdez performed autopsies on all three babies and described typical findings of erythroblastosis fetalis with generalized icterus grade 2; kernicterus grade 3 and foci of hematopoietic activity in spleen, liver and bone marrow. The brain icterus was especially marked.

### Discussion

**DR. R. J. ECKMAN:** It is certain that a thorough understanding of the practical facts concerning the dangers resident in blood transfusion and the Rh factor must be had by physicians responsible for blood transfusions. I have wondered whether the frequency of an Rh factor transfusion reaction was sufficient to warrant the careful study, expense and change of procedure which is entailed in this rather complicated subject. There is a theoretical occurrence of a combination of Rh negative mother and Rh positive child in 9 per cent of pregnancies.<sup>3</sup> However, Potter<sup>6</sup> calculates that sensitization of the mother and the development of erythroblastosis in the child occurs in from one per 370 births to one per 500 births. Put in another way she found that there was approximately one per 2,380 with the first child born and one per 245 with subsequent births. Schwartz and Levine<sup>7</sup> calculated by a different method (not entirely free from criticism) that erythroblastosis occurred in 0.65 per cent of all births. Furthermore, since a transfusion of Rh positive blood (87 per cent of general population) to these women carries an approximately 50 per cent mortality it is quite obvious that all pregnant women must be considered potential subjects for a fatal transfusion reaction on the basis of Rh incompatibility. To a lesser degree it has been found that women who have been pregnant at any time during their life are possible candidates for the same type of transfusion reaction. The exact percentage of this group of women who will show a reaction due to Rh factor incompatibility is not known. The amount of work necessary to completely eliminate the possibility of danger to these women may be more expensive than the practical value derived at least in certain divisions of this category of patients.

The second and only other group of patients in which an Rh factor transfusion reaction may occur are those in which multiple blood transfusions<sup>8</sup> are given to an Rh negative recipient. The exact figures of the frequency of reactions in these patients is not available. I am told that there have been a number of deaths in this group in our armed forces and that precautionary measures are now being taken through certain laboratory procedures and the selection of Rh negative donors to prevent these deaths.

Erythroblastotic newborns are a third group which, however, present an entirely different transfusion problem. Here the main idea is to give the infant red blood cells which will not be destroyed by the transient (approximately ten days) antibody which has entered his blood stream and tissues while in utero from his mother. Both Rh positive and Rh negative red blood cells have been given the infant with success. Rh negative cells are likely to do the most good in such an infant. Red blood cell counts should be determined every twelve hours. Counts below 3,500,000 indicate the necessity of blood transfusions. Since the total blood volume of a newborn is between 250 and 350 c.c.<sup>1</sup> it is possible to give the newborn infant with erythroblastosis fetalis 150 c.c. of blood in two transfusions within twenty-four hours of the time of birth. The infant should not be given his mother's milk.<sup>12</sup>

**DR. A. H. WELLS:** At least three important lessons may be learned from Dr. Eckman's case. First, our present methods of crossmatching blood before transfusions will not screen out all cases of incompatibility due to the Rh factor. This is extremely important since it throws much of the burden of prevention of these reactions on the shoulders of the practicing physician. He must know when to order the laboratory to run special tests as well as to follow certain precautions while giving blood to these patients. Second, infants with acute hemolytic anemia of the newborn should be given adequate amounts of compatible red blood cells as soon as possible after birth. Third, once a transfusion reaction has occurred, it is the immediate duty of all concerned to determine whether or not it is a hemolytic reaction and if so to start therapy to prevent the high percentage of fatalities that have occurred in these patients. With the exception of "speed" reactions all other proved causes of transfusion reaction pale into insignificance when compared with a hemolytic reaction.

I have, after careful study, summarized and tabulated a group of suggestions for the hospital medical staff on the subject of transfusion reactions (see table). These have been arranged under three headings: diagnosis, treatment and prophylaxis. They will be printed on the back side of the hospital transfusion sheet<sup>9</sup> which is always present at the bedside or operating room table when a blood transfusion is being given. In these instructions and suggestions you will find a memory refresher course concentrated in a nutshell. The wording of these notes has been carefully considered and should be followed to the letter. For detailed explanations see your pathologist or the references.

### Transfusion Reaction Instructions

**Diagnosis.**—In case of a blood transfusion reaction (chills, fever, flushing, palpitation, constriction dyspnea, cyanosis, hemoptysis, nausea, vomiting, pains, restlessness, fall in blood pressure, cold, clammy skin, headache, skin eruptions, swelling of joints, et cetera,

1. Stop the transfusion immediately.
2. Immediately take blood from the patient with an absolutely dry syringe and needle and put into a dry test tube. Order tests for quantitative hemoglobin<sup>2</sup> and icterus index on blood serum.
3. Send the remaining blood intended for the patient to the laboratory for "stat" tests for incompatibility.
4. Order the first urine specimen sent to the laboratory to be tested for: (1) hemoglobinuria, (2) acid hematin casts, (3) red blood cells and (4) pH.
5. Order blood smear for erythrophagocytosis.
6. Order Wiener's<sup>10</sup> differential agglutination tests (at discretion of the laboratory).
7. Order Rh typing and crossmatching by Levine Method<sup>4</sup> of original blood specimens (in icebox) if the patient has had previous transfusions or if she has ever been pregnant.

### Treatment.—

1. If it is a severe reaction with lumbar pain or if the laboratory finds that it is a hemolytic reaction start 100 c.c. of 3.8 per cent sodium citrate solution intravenously immediately. Also start sodium bicarbonate 10 grains four times a day or sufficient to keep the urine alkaline. If there is a severe fall in blood pressure give epinephrine hydrochloride  $\frac{1}{2}$  to 1 c.c. of 1 to 1,000 dilution and repeat if necessary. Induce diuresis with saline and glucose. Some authors advise giving more blood which is compatible. Antispasmodics such as papaverine and aminophyllin may be helpful. In a true hemolytic reaction the prognosis is about 50 per cent survival.

2. If the reaction is allergic in type give epinephrine hydrochloride  $\frac{1}{2}$  to 1 c.c. (1 to 1000). Try skin test. Order differential blood count for eosinophiles.

## CLINICAL-PATHOLOGICAL CONFERENCE

### Prophylaxis.—

1. Run in the first 20 c.c. of blood slowly (fifteen minutes). A modification of Wiener's<sup>11</sup> biological test may be used in which the patient's blood plasma and serum are compared colorimetrically with plasma and serum, respectively, before and ten minutes after a 50 c.c. transfusion. The test is repeated during a second hour comparing all specimens for evidence of hemolysis by determining icterus index and quantitative hemoglobin analysis.<sup>2</sup>

2. Use healthy fasting donors free from asthma, allergy, skin eruptions, syphilis, malaria, night sweats, weight loss, cough, fatigue, diarrhea, palpitation, fever, jaundice, upper respiratory infection, heart diseases and anemia.

3. If multiple transfusions are given to an Rh negative patient try to give them within five days or try not to let more than four days elapse between transfusions.

4. Use only Rh negative donors for: (1) women with erythroblastic infants, (2) pregnant women with Rh negative blood, (3) Rh negative or Rh positive patients receiving multiple transfusions with a hemolytic transfusion reaction proved to be due to Rh factor, or not explained by laboratory findings, (4) Rh negative women with a history of one or more pregnancies with any transfusion reaction under similar circumstances as the preceding and (5) erythroblastic infant transfusions no matter what Rh type the infant is (Rh negative O blood from the icebox is satisfactory).

5. It is advisable not to use the husband or his blood relatives as donors for a pregnant or a recently pregnant woman. This is especially true if she is Rh negative.

6. In emergency transfusions of pregnant or post-partum women it is advisable if possible to give plasma until Rh typing can be performed or until an Rh negative group O professional blood donor can be used (see laboratory index for these donors). If Rh negative, these patients should receive Rh negative blood of their own group or of group O.

7. "Universal donor" (group O) blood should have

A and B factors of Witebsky added (from icebox) or "acceptability"<sup>5</sup> tests run if given to patient in another group.

8. Try to avoid using the same donor twice even if in the same blood group as the patient.

9. Give blood very slowly to patients with poor cardiac reserve.

10. Always have filter in transfusion (blood or plasma) apparatus or filter through eight thicknesses of gauze.

### References

1. DeMarsh, Q. B., Windle, W. F., and Alt, H. L.: Blood volume of the newborn infant in relation to early and late clamping of the umbilical cord. *Am. J. Dis. Child.*, 63:1123, (June) 1942.
2. Flink, E. B., and Watson, C. J.: A method for the quantitative determination of hemoglobin and related heme pigments in feces, urine and blood plasma. *J. Biol. Chem.*, 146:171, 1942.
3. Koucky, R. W.: Experiences with the Rh substance in transfusion reactions. *Minnesota Med.*, 26:980-990, (Nov.) 1943.
4. Levine, P.: The role of isoimmunization in transfusion accidents in pregnancy and in erythroblastosis foetalis. *Am. J. Obst. & Gynec.*, 42:165, 1941.
5. National Research Council: The operation of a hospital transfusion service. O.C.D., publication 2220, P. 23, March, 1944, Office of Civilian Defense, Washington 25, D. C.
6. Potter, Edith L.: Present status of the Rh factor. *Am. J. Dis. Child.*, 68:32-58, (July) 1944.
7. Schwartz, H. A., and Levine, P.: Studies on the Rh factor. *Am. J. Obst. & Gynec.*, 46:827, 1943.
8. Vogel, Peter, Rosenthal Nathan and Levine Philip: Hemolytic reactions as a result of isoimmunization following repeated transfusions of homologous blood. *Am. J. Clin. Path.*, 13:1-11, (Jan.) 1943.
9. Wells, Arthur H.: Technical precautions before blood transfusions. *Am. J. Clin. Path.*, 11:9-19, (Jan.) 1941.
10. Wiener, Alexander S.: Hemolytic transfusion reactions. I. Diagnosis, with special reference to the method of differential agglutination. *Am. J. Clin. Path.*, 12:189-199, (April) 1942.
11. Wiener, A. S., Silverman, I. J., and Aronson, W.: Hemolytic transfusion reactions. II. Prevention, with special reference to a new biological test. *Am. J. Clin. Path.*, 12:241, 1942.
12. Witebsky, E., Heide, A.: Further investigations on the presence of Rh antibodies in breast milk. *Proc. Soc. Exper. Biol. & Med.*, 52:280, 1943.

### THE MEDICS

The "medic" is a must in any fighting force. He is likely to combine the functions of Kipling's Gunga Din, Florence Nightingale, the Good Samaritan and the most skillful surgeon science has produced. He frequently does so at the cost of his own life. Unarmed stretcher-bearers seek out the wounded where the shells are still striking. Because they know that time is of the essence, they are always in a hurry. Sometimes a complicated operation has to be performed in a foxhole. During the Metz offensive a 19-year-old medical aide saved a doughboy's life by cutting a fountain-pen tube into his throat with a pocket knife. But they try hard to get the victim to the nearest hospital. Maybe it is a blasted barn or an open cellar. It may be a tent over the brow of the next hill, with the surgeons operating under enemy fire. At Bastogne two or three surgeons

had to handle 800 patients with nothing to dull their pain but cognac. Everybody cheered when five more surgeons got through by plane and glider.

There is little glory in the Medical Corps. It is just hard, dirty work and mighty dangerous. The Red Cross seems to mean little to the enemy. He has bombed hospital tents from Anzio to Aachen. These medics are tough, but among the torn and dying men learn to be tender, too. They shun glory, but they have their pride. They are proud to have saved 97 out of every hundred wounded. They are proud that their miracle drugs and blood banks send from 50 to 80 back to fight again. They are proud because nobody in our whole vast Army, not even the foremost combat crew or the deadliest flying wing, has done a finer job than the Medical Corps.—From the *New York Times*, Jan. 5, 1945.

### ARMY AURAL REHABILITATION

Before a deafened soldier can be fitted properly with a hearing aid he must have a custom-fitted earpiece to which the aid can be attached. Until now these earpieces were manufactured by commercial concerns and some delay was involved due to the necessity of packing and transmitting the cast and receiving the earpiece by mail. Now, however, earpieces of clear acrylic or lucite are to be manufactured in the three Army hospitals for the deafened—a step which means the soldier gets his hearing aid about a week sooner.

Each soldier-patient with impaired hearing is scientifically tested to ascertain precisely which hearing aid is best for him. Since variations have been found even in aids of the same model, a stock is maintained at the

hospital so the soldier receives the aid which proved most satisfactory for him when tested. In addition to equipping the men with hearing aids, instruction is given in lip reading and speech correction, if necessary.

A great many cases of deafness among soldiers which passed undetected at the time of induction have since been detected through the modern scientific methods now in use by the Army Medical Department. These deafened, as well as those with service-incurred deafness, are being rehabilitated at Deshon General Hospital, Butler, Pa., Hoff General Hospital, Santa Barbara, Calif., and Bordon General Hospital, Chickasha, Oklahoma.

## HISTORY OF MEDICINE IN MINNESOTA

### HISTORY OF MEDICINE IN GOODHUE COUNTY

#### 1852-1860

The history of medicine in Goodhue County begins with the first white settler in that district. William W. Sweney, one of the outstanding physicians and one of the most loved and respected men of Goodhue County, came in 1852 accompanied by an Indian farmer and an Indian missionary to the place which several years later became known as the town of Red Wing.

Dr. Sweney was born in Pennsylvania in 1818. When eighteen years of age he moved with his parents to Fulton County, Illinois, where he read medicine with Abram Hull. In 1850 he graduated from Rush Medical College, Chicago, going to St. Paul for a short while and thence to Red Wing where he continued to practice until his death. In an address to the Old Settlers Association of Goodhue County, he described his first exploration of the territory and the first year he spent there. Building a home, transporting the necessary provisions and implements, and providing for a food supply in these early days was a task, indeed, and there were no helpers except the Indians. He finally persuaded a group of squaws and young girls to dig his potatoes in return for a share of the vegetables; but in spite of their agreement he found it hard to get the work done unless he stayed in the field and worked, himself, thus lending them moral support. He gave his professional services freely to the Indians and received in return their friendship and respect.

The next year he brought his family to their new home. Other settlers soon followed so that a community was quickly established.

The second physician to come to Goodhue was John Kelly who settled in Florence township in 1853. So rapid was the mushroom growth of the pioneer river towns, that by the end of 1855 a weekly newspaper, the *Red Wing Sentinel*, had been established. Although, like most of the early papers, the bulk of the material was bought from a newspaper printing company in some other state, it contained a short column of local news and local advertisements. Thus, in January, 1856, we find in it the cards of Drs. Sweney and F. F. Hoyt. The next year the *Sentinel* published the cards of A. B. Hawley, M.D., W. Brown, M.D., and Charles H. Connelly, M.D., of Red Wing. Dr. Connelly occupied the same office "as hitherto occupied by Dr. Brooks." There is also a reference to Lew H. Garrard who came to the vicinity of Frontenac in that year. Charles Hill, a graduate of Rush Medical College, Chicago, settled in Roscoe in 1857, and two years later moved to Pine Island, where he remained, except for a short interval, until his death. All of these were of the regular school. The first homeopathic physician was C. G. Higbee, who came to Red Wing about 1860.

During these pioneer days the doctors often held public offices, since they were better educated than the ordinary settlers. Dr. Garrard and Dr. Kelly were elected county supervisors. Dr. Hoyt was a member of the first city council of Red Wing, and Dr. Sweney was a member of the territorial legislature in 1858.

It was not unusual for the business cards of these men to state that calls would be promptly answered day or night, in town or in the country. Dr. Connelly

added a long list of references including physicians, judges, a professor, and a clergyman.

In July and August, 1852, there were seventy-five cases of malaria in the little settlement of Red Wing. Five of these were among the white population which numbered, in all, about thirty. The other cases were among the three hundred Indians who lived in the vicinity. Referring to this epidemic, Dr. Sweeney said that the paroxysms were the most marked that had ever come under his observation, and that this was the worst epidemic ever observed in Minnesota. In the winter of 1852-1853 there were several cases of typhoid fever, and in July and August, 1853, malaria again appeared. Dr. Sweeney reported that it mingled with typhoid fever, of which there were about twenty-eight cases in August and September, none fatal. This type of so-called "typho-malarial" fever has been disproved; but at that time it was thought to be a possible and usual combination. Typhoid again visited Red Wing and the surrounding country in 1856 in a more malignant form and continued in a subacute and sporadic form during the next eight years. In 1855 smallpox appeared in a comparatively mild form and in the same year dysentery assumed an epidemic form, especially from July to September. Diphtheria was found in 1858 in various parts of the country.

Asiatic cholera was first brought to Red Wing in 1853, by immigrants coming up the river. The next year a steamship arrived carrying seventeen persons ill with the dread disease. The patients were isolated on a knoll near old Spring Creek mill and Dr. Sweeney visited the group every day. Ten of those stricken survived. There were a few cases the following year. Although none of the residents of Goodhue County contracted the disease, it was said to have hindered the growth of Red Wing by scaring settlers away.

Deaths from consumption were not infrequent during these years and in the years that followed; but in this account they will be disregarded for the most part since generally these people had acquired the disease in the East. They came to Minnesota hoping that the climate might have a curative effect. There were many calls for medical attention in cases of accident, especially broken bones and wounds from circular saws, as well as for the diseases mentioned above.

#### 1860-1870

The period of the next ten years was one of growth and change. Among the first medical newcomers to Red Wing were A. H. Jones, I. E. Wright, and E. S. Park, who arrived in 1862, and W. M. Winkelmann, and C. H. Blecken who settled there a short time after them.

The Civil War was a disturbing element both in its course and in the conditions which followed in its wake. During the war Dr. Higbee served as a captain in the Union Army. Dr. Garrard enlisted in the Seventh Regiment and Dr. Brown was commissioned surgeon. During the war it was hard enough to make a living but after the war it was even more difficult. A limited amount of practice had to be divided among an increasing number of physicians, to say nothing of quacks. Physicians who established themselves in Red Wing following the war were: C. N. Hewitt, J. M. Knox (an oculist), John W. Kock, Christian Gronvold, William Acharius, R. F. Goodwin, Salem Town, and Bruno Jaehnig.

Some of these men met the financial difficulties of the times by running a small business on the side. Dr. Brown, for example, had a photograph and gem gallery. Drs. Jones and Hawley ran drug stores. Dr. Park acted as county coroner for many years and Dr. Hewitt was an examining physician for pensions. Dr.

Winkelmann announced himself as physician, surgeon, and dentist. The problem of quackery was a serious one throughout the sixties. Men who could find no other way of making a living set themselves up as physicians and practiced medicine. Some did not even pretend that they had training. Others added M.D. to their names as calmly as the man down East who adopted the letters as an abbreviation for "Mule Driver." By far the largest part of the advertisements in the newspapers was concerned with cure-all patent medicines, and with confidential information which referred one to some doctor or institute. Medicines were for everything from catarrh to "indiscretions of youth." Traveling "doctors" and natural healers were another menace. They visited the towns and generally lectured free of charge to attract attention to their powers. One even offered the sum of \$100 to anyone whose case he took and could not cure. We quote one of the milder announcements of the period:

Dr. Purinton, the renowned Lung Physician, will visit Red Wing, Saturday, October 17, and will remain four days at the National Hotel. Dr. Purinton has devoted his attention for the last 20 years to the treatment of Chronic Diseases of the Throat and Lungs; also those of the Heart, Liver, Kidney, etc., Scrofula, Chronic and Inflammatory Rheumatism, together with Female Diseases in all their forms. Dr. Purinton defies the whole medical Faculty to beat him in curing Dyspepsia; his practice is based on the most correct theory of *materia medica* calculated to act in harmony with all the laws of the system without reducing it. The affected are invited to call and consult with him. He claims he can tell their complaint without asking any questions free of charge.

People were generally less informed about health and more credulous than they are today, and editors willingly said a good word for anyone who advertised in their newspapers.

Dr. William Acharius found making a living in competition with quackery so difficult that he soon returned to Sweden, where his abilities were rewarded by an office given by the king.

In 1862 a physician from Wisconsin lectured on anatomy, physiology, and health with anatomical and physiological charts for illustrations. That he had some surgical skill is indicated by reports of successful operations for cataract and cross-eyes. His wife would "see the ladies." Not all lectures, therefore, were completely misinforming though the knowledge of a large number, even of physicians, was vague and unscientific. Their prescriptions and recommendations published in the newspapers are witness to the fact. It was generally known that some diseases could be acquired from drinking water, for instance. Yet they disregarded the fact that water might be tainted and usually laid the blame on its coldness. Therefore, "excessive" drinking of very cold water and such "excessive" bathing as one was inclined to do in summer were frowned upon.

Some idea of the desirability of sanitary living conditions is noted in 1864, however, when attention was called to the unhealthy conditions of stagnant water in the Red Wing city gutters. Several times in 1867 and 1868 the cleaning of alleys and streets under the supervision of the city marshal was ordered in order to prevent disease.

In 1861 there was a slight outbreak of smallpox. The newspapers, preferring to advertise their locality as healthy, were slow to publish reports, and, when they did, claimed that facts had been greatly exaggerated. In October smallpox appeared in Vasa, about ten miles from Red Wing. It also appeared in Dakota County about this time, carried to both places, apparently, by immigrant harvest hands from Rice County. Several of these cases in the country districts proved fatal. Subsequently several cases occurred in a tenement house in East Red Wing which was crowded

with immigrants. There were two cases in families near Red Wing and a number of scattered cases throughout the city. A school in the vicinity of the tenement house was temporarily closed and the city paid for vaccinating hundreds of poor people and children. The epidemic seems to have been curbed in about a month. It appeared again in 1866 and in 1868, but in a comparatively mild form. Diphtheria, which, since its first appearance in Goodhue (1858) had been particularly malignant, was widely prevalent in 1862 in the vicinity of Red Wing and on the Wisconsin side of the river. Deaths from it were a frequent occurrence. In February, 1863, the *Goodhue County Volunteer* reported:

There was never so much sickness known in the county as now. It almost seems as though the land were visited with a pestilence as well as desolated by war. From every part of the county and state we hear the most heart-rending accounts of mortality, particularly among the children. In some cases whole families have been swept away, and in many places there is hardly a family that has not been invaded.<sup>1</sup>

After 1863 the disease assumed a milder form and occurred only sporadically. In 1864 cerebrospinal meningitis appeared for the first time, as well as a considerable amount of bowel disturbance. The meningitis was mainly confined to the Mississippi river area. The majority of cases were children and the mortality was about one to six or seven in the clearly defined cases.<sup>2</sup> Symptoms were very diversified.

In August of the next year another bad epidemic was reported.

We have never known a time when there has been so much sickness and when disease terminates so fatally, with so much certainty as now. Particularly is this the case among the children. Almost every family in this city can attest the truth of what we say. One physician not long ago made the remark that he had twenty patients, all children, and that he did not expect any of them to recover. Adults, too, are victims. With them the complaint takes the form of cholera morbus, several cases of which have occurred within the last week.<sup>3</sup>

In 1867 the *Goodhue County Republican* published, "in view of the possible return of cholera this summer," a long account of sanitary measures, purification, and measures of restriction advocated at the International Sanitary Conference which had met at Constantinople. During the year there were a number of cases among immigrants, many of them fatal, some terminating in eight hours. The last occasion when cholera patients were brought by boat to Red Wing was in 1868. Dr. C. N. Hewitt visited them at the levee and gave them medical aid. The city furnished a house for them on an isolated island and there was no further spread of the disease.

Typhoid fever prevailed in 1863 in a particularly malignant form, and for several years following there was a limited but continuous prevalence, without any well-defined centers of infection. From 1868 until July of 1869 there was no typhoid in any form, according to Dr. Sweeney, who said it was the longest period of exemption which had ever occurred in his experience of seventeen years. The main causes for the disease were less the local conditions than the influx of population and many people contracted the disease before their arrival, due to crowded and unsanitary traveling conditions.

1. *Goodhue County Volunteer*, February 25, 1863.

2. W. W. Sweeney: "Epidemics and Endemics of Minnesota."

3. *The Goodhue County Volunteer*, August 17, 1864.

(To be continued in the March issue.)

# President's Letter

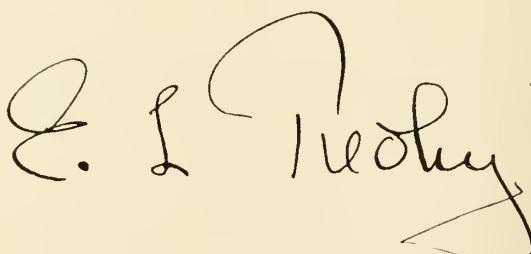
## SPRING TO ACTION!

Congress and our State Legislature have reconvened. We still live with a complete survival of representative government. The test to which it is submitted by all-out war is terrific. It will survive not only the war, but all that follows in its wake. When Lincoln left for Washington (the film presentation effectively recreated the event), he bade his friends at home a nostalgic farewell that foretold a real separation. Today no citizen chosen to represent his region or legislative unit is either separated or insulated from his constituents. He takes very definite steps via the press, the radio, official records and letters to take the feel of public opinion.

It should be our obligation as physicians and citizens to keep him informed at all times of our opinion, especially in matters relating to the practice of medicine. Likewise, we must not fail to help make Doctor Sogge in Saint Paul and Doctor Lawrence in Washington as efficient as possible. To adopt a lofty isolation attitude toward the efforts to safeguard the public and our profession against immature and unwise legislation, is simply to hand over our destinies and public health to the experimenters and uplifters.

The North Central Medical Conference held in Saint Paul, December 10, was a great success. The arrangements made by our Secretary, Mr. R. R. Rosell, were splendid. This foregathering of men from seven North Midwestern states, and the vigorous program (Pre-paid Medical Service—Postwar Medical Care, et cetera) was most impressive. Rest assured—your representatives in Medicine are rapidly mobilizing for effective and judicious leadership. Our record of past conservation of public welfare and health entitles our profession to full and explicit hearing. Now here is the point. Dr. J. S. Lawrence, speaking before the Conference upon the subject, "My First Three Months in Washington," reiterates what you already know is essential: Keep in touch with your elected representatives, wherever they are; send them letters or telegrams; give them the information they need on any bills or measures pending before them; most of all, tell them when, where, and why you expect their support. It is the great argument to which they all listen. Therefore, do not permit your indifference to let this public opinion swell from faulty and injudicious sources. We have earned the right to a first hearing.

Therefore, when appeals come to you from Doctor Sogge and from Doctor Lawrence, spring to action!

A handwritten signature in black ink, appearing to read "E. L. Murphy". The signature is fluid and cursive, with a large, stylized 'L' and 'M'.

President, Minnesota State Medical Association.

# Editorial

CARL B. DRAKE, M.D., *Editor*; GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

## THE MAYO MEMORIAL AT THE UNIVERSITY OF MINNESOTA

INTEREST has been aroused among doctors of Minnesota by announcement of plans for erection of a great center for medical research, teaching and administration, on the University of Minnesota campus, as a memorial to William J. and Charles H. Mayo. Citizens of Minnesota, where the Doctors Mayo were born, and where they practiced all their lives, will be asked to contribute funds.

A statewide appeal for contributions has already begun. Committees are being formed in the principal cities and towns of the state to sponsor the appeal. In all places the committees are largely composed of lay people, and usually a lay person heads the group. However, Duluth's committee, headed by Dr. E. L. Touhy, was the first to begin functioning.

Donations to this scientific project are tax exempt up to 5 per cent for corporations and 15 per cent for individuals of net income.

A bill will be introduced in the current Legislature asking for an appropriation of \$1,000,000.00 for the Memorial. The Committee of Founders was established by a concurrent resolution of the Legislature of two years ago, and hence there is every reason to believe that the Legislature will take active interest in this scientific advancement. Governor Thye has called the attention of the Legislature to the matter.

The proposed building on the University Campus is visualized as contributing much to the general public, to industry, to practicing physicians, to nurses, to medical students, to returning veterans, and especially to research. The University of Minnesota has long needed such a building to provide essential and well co-ordinated physical facilities by assembling under one roof and in one well-co-ordinated campus the various departmental research laboratories, with ready access to classrooms and hospitals and with centralized administration. The Mayo Memorial will create in fact a real medical center, where research, the training of doctors, and the treatment of patients,

will go forward hand in hand every minute of the day.

Although it has not yet been announced in detail, it will probably soon be made known that there are funds available for a proposed School of Public Health as a part of the Minnesota Campus. All the proposed facilities will provide much better refresher courses, help orient doctors returning from military service, and above all, stimulate research. These facilities will tend to hold the best type of men on the University faculty.

Dr. Donald J. Cowling of Carleton College is chairman and Dr. George Earl is secretary of the Committee of Founders.

Doctors, of course, will be taking great interest in assisting in the completion of facilities for the University of Minnesota Medical School which will keep this teaching institution in a position of leadership. The council of the Minnesota State Medical Association, at its last meeting, heartily endorsed the project.

## PSYCHOSOMATIC MEDICINE

SINCE the adjective psychosomatic is appearing more and more frequently both in medical literature and in informal medical discourse and since there is a decided increase of interest in the actual use of psychological findings and techniques, it is desirable to consider critically the meaning of the term and the procedures which it represents.

The essence of the psychosomatic idea is that the psychological and physical approaches to medicine are complimentary and both are necessary to a full understanding of clinical problems. After all, physiology and psychology are the same thing in the sense that they study the functions of an organism but from different points of view. Certainly all psychologists and most physiologists agree that physiologic functions cannot be studied accurately in the human being without consideration of the emotions present at the time of the investigation. Confusion over the role of psychogenesis in medicine results largely from not see-

ing that the psychological approach and the physical approach are two ways of studying the same patient.

It is unfortunately true that most of us in medicine have been brought up to accept more or less completely the dualistic concept of a separate body and mind. Hence we need some such term as psychosomatic to bridge the gap which we find before us. While the psychosomatic idea is not new, its terminology represents the latest, most popular and successful version of the ancient mind body problem. Any term or device which leads the physician adequately to consider and evaluate the social and emotional life of his patient will result in better diagnosis and treatment.

The psychosomatic approach, taken in the study of any disease, will yield greater knowledge than we could get by the physical approach alone. The most useful results can naturally be expected in those conditions in which the effect of emotion is most important and evident. Most of the studies to date have been conducted on disorders of the skin, the cardiovascular system and the gastro-intestinal tract, where the effect of emotion has long been clearly recognized. Clinical studies and laboratory experiments have produced good evidence to show that peptic ulcer, for example, tends to occur in individuals of a certain temperament and that exacerbations and remissions of attacks are related to the life situations of the patient. Studies in hypertension, asthma, allergies and many other conditions, although sometimes less well worked out, yield promising information.

But in some ways the term psychomatic is unfortunate. By referring both to mind and to body, it tends to perpetuate the very thing it is designed to overcome; namely, the artificial dichotomy which handicaps medicine. Thus it may tend to stand in the way of attaining a thoroughly scientific understanding of the functions of the total individual in his environment. Moreover, since there is reluctance on the part of both the physician and the patient to use and accept such relatively accurate terms as psychoneurosis, the physician may yield to temptation and label any condition in which psychogenesis is prominent as a "psychosomatic disorder." The result will be a loss of precision. And, on the other hand, the term "psychosomatic disease" will lose its conceptual value if it is loosely applied to all psychogenic

processes and disturbances of the psyche. However, in spite of the theoretical and semantic objections, it serves a practical purpose and will be used as long as the need exists. It should be restricted to those conditions in which a structural alteration or severe physiological disturbance is believed to have psychogenic factors as an important part of the etiology.

Even those physicians who are familiar with psychosomatic findings and techniques in a general way often fail to appreciate fully certain considerations:

1. They neither realize the amount of time necessary for an adequate inquiry into the patient's background and personal characteristics, nor do they know how to conduct this sort of inquiry.
2. They fail to recognize the true nature of psychogenic factors, tending to see causality in superficial situational difficulties which are actually the result of the patient's earlier inadequacies. Or, on the other hand, they fail to see causality because the factors which come to light do not appear sufficiently dramatic, although they are actually very important in the understanding of the case because of the existing personality framework within which they occur.
3. They fail to recognize or understand the very important role of the many more or less unconscious mental functions; these are not readily detected or remedied unless one has special psychiatric training.
4. They follow the unwarranted but common tendency to consider all illness as either organic or psychoneurotic; whereas they should evaluate the various psychogenic factors which may operate in any case where there are organic findings.
5. They fail to recognize that psychogenesis is effected through usual physiological channels and is not some type of mystical process.

Psychosomatic medicine has much to offer, but its advocates would do well to keep in mind the following cautions: First, when psychological and physical symptoms occur together or in sequence, it does not necessarily follow that one causes the other; they may both be manifestations of the same cause, or they may be due to separate causes. Second, psychosomatic medicine offers no easy road to clinical success; much study and long

practice are required to attain competence. And, finally, there is no substitute for common sense and thorough clinical work.

BURTRUM C. SCHIELE, M.D.

### ASSOCIATION OF AMERICAN PHYSICIANS AND SURGEONS

THE Association of American Physicians and Surgeons was organized in 1943 with headquarters in Gary, Indiana, by members of the Lake County Medical Society, Indiana, who felt that the American system of the private practice of medicine was threatened by legislation in Washington, and something ought to be done about it. The organization concerns itself primarily with publicity and legislative activity, and has become national in its membership. The Association is similar to the Western States Public Health League, also organized in 1943 in the far western states for similar purposes, including the establishment of a medical service bureau in Washington at a time when the American Medical Association seemed hesitant about taking such a step.

The profession has been recently circularized by the Association of American Physicians and Surgeons, calling attention to the renewed threat of state medicine with the return of Senator Wagner of New York State to Washington, and the increase in power of the Political Action Committee of the CIO which demands state medicine.

One of the purposes of this Association is to enroll at least a majority of the physicians in the country. Membership fee is \$10.00, and members promise to refuse to take part in state medicine if enacted. It seems reasonable to conclude that if the majority of physicians refused to become the employes of the Federal Government, state medicine would become a fiasco. Whether any organization of physicians, the members of which refused to accept government employment, would be open to legal action on the part of the government is a legal question about which we are uninformed. In the United States almost anyone can sue anyone for anything, and in view of past experiences, the government might well take such a step. On the other hand, the refusal to take a governmental job could not be interpreted in the nature of a strike, as physicians work for patients and not for the government. The Wagner-Murray-Dingell Bill provided for voluntary

co-operation on the part of physicians, and we cannot conceive of compulsion in any bill which might be enacted.

It hardly seems necessary, however, to form another national organization for the purpose of presenting a united front on the question of accepting or refusing governmental employment, should it be offered. The physicians of the country are organized in county, state, and national organizations, and should be able to present a united front if and when state medicine is enacted into law. How firmly, however, members of the American Medical Association would stand together on this proposition is a question. The British Medical Association did not take such a stand, much to the detriment of medical practice in Britain, although British physicians are said not to have suffered financially.

At least, the Association of American Physicians and Surgeons has brought the question of our attitude towards the possible enactment of state medicine to the fore, and the subject provides food for thought.

### EXPANSION OF MEDICAL SCHOOL POST-GRADUATE INSTRUCTION

VARIOUS surveys of the desires of medical officers in the armed services indicate that a large percentage feel the need of postgraduate study following discharge from service before renewing private practice. This will tax the facilities of medical schools and hospitals and will require expansion in teaching personnel and available clinical material.

The Medical School of the University of Minnesota is making plans to accommodate returning Minnesota physicians. Part of the expansion includes the employment of two full-time faculty members to have charge of teaching medicine and surgery at the Ancker Hospital, Saint Paul, which will utilize the facilities of this large municipal hospital for teaching purposes. The number of full-time faculty teachers may be extended to other specialties if the demand warrants. The staff of the hospital recently voted unanimously to co-operate with the Medical School in the proposal.

The program includes more than doubling the number of medical school fellowships, providing for more clinical assistants on a six to twelve

(Continued on Page 155)

# MEDICAL ECONOMICS

Edited by the Committee on Medical Economics

of the

Minnesota State Medical Association

George Earl, M.D., Chairman

## RURAL HEALTH PROBLEMS AS FARM LEADERS SEE THEM

Proceedings have just been published of a conference on medical care and health services for rural people, held recently by the Farm Foundation in Chicago.

These proceedings are published verbatim and should be required reading for every physician who is thinking seriously about the shape of things to come.

It will not be news to physicians that organized farm groups are actively concerned about inadequate medical services in sparsely settled areas and among marginal farmers. Doctors, themselves, are well aware of the fact that there are many such unsolved rural problems, though they may not be aware of the extent to which farmer leaders are concerning themselves about self-supporting middle income farmers.

It will not be news, either, that farm group leaders in some localities have occasionally been affronted by what they regard as unjustified opposition from medical societies to some of their well-meant planning.

### Book Reflects Demand

The book is enlightening, nevertheless. It underlines the rural problem generally, a problem of which some medical men are not yet fully informed. It reflects impressively the volume and articulateness of the demand among lay groups for extensive additions and changes in medical and health services for farm people. And, incidentally, it presents the medical profession in the light, rather, of a problem child whose capacities and accomplishments are respected while his general refractoriness is deplored. This, too, is a point of view which should be known to the medical profession.

Many of the sources of anxiety expressed at this meeting are, of course, well justified and generally recognized by medical authorities as

well as farm leaders. Among them is the shortage of doctors in rural areas; the need for additional hospital and diagnostic facilities, and especially for regional planning of new facilities; the need for providing help to areas which are unable to support adequate facilities unaided; the need for great expansion in organized public health services.

### Voluntary Plans Preferred

Farm leaders are also convinced, apparently, of the desirability for spreading costs of medical and hospital services by the insurance method and are earnestly canvassing possibilities in the hope of embarking on experiments of their own as soon as the war is over. In this, also, they have the interest and agreement, in principle, of the medical profession.

It is important to note that the majority are thinking in terms of voluntary plans, with subsidies as needed, and not about compulsory plans, as part of an expanded social security program. As a matter of fact, social security in its present form does not apply extensively in rural districts and there is obviously considerable doubt of its acceptance by farmers.

Points of departure from medical thinking begin, apparently, with the question of control. Most spokesmen for farm organizations, as well as many of the lay experts present, were firm in their belief that control of prepayment plans should rest with the people who pay the premiums and buy the service rather than with the people who provide them. All of them acknowledge, as a matter of course, that medical aspects should be controlled by medical men. But few were able to see any reason why such professional control could not be comfortably and smoothly adjusted to lay control of finance and administration.

### Surgical Coverage Not the Answer

Furthermore, the majority, while interested in plans for coverage of surgical and obstetrical ex-

pense in the hospital, appeared to be impatient of such limited and partial beginnings. Most of them are clearly putting their emphasis upon preventive medicine and they are virtually unanimous in the feeling that surgical coverage does not answer their problems and that the cost is too high for the benefits provided.

Indeed, their chief interest does not lie in trying to find a way to meet already existing demands. They admit that the majority of farmers do not demand any extensive preventive medical and health service. What they want to do is to create a new demand—to educate rural people to the importance of preventive services—and then to go out and provide the services, by some mechanism or other, to take care of the demand.

#### **"Too Little for Too Much"**

As for the medical profession, itself, complaints against it were frequent and occasionally acrimonious. Following is the gist of them. Complete control of insurance plans must not be left in the hands of doctors and hospitals, they believe, because doctors and hospitals will always tend to limit service and elevate costs; experiments now in existence under medical society management reflect the tendency. The doctors provide too little for too much, they say, and medicine is really interested only in maintaining to the last possible moment the sliding fee, and fee-for-service practice, among those who can pay the fees. Enabling acts permitting organization of nonprofit prepayment plans have been secured by medical associations in many states; but they believe these acts have been used, too often, chiefly to keep others from stepping into the picture. In some cases (Ohio was mentioned particularly), they have been used, not to foster medical insurance plans, but to delay them.

#### **They Study, Too**

One woman delegate reported with some irritation that her own farm community group had been ready with a plan for some time and had received a courteous hearing and vague promises for the same length of time from the medical society. She had been put off repeatedly with the excuse that a new committee had been appointed and the committee was "making a study."

Perhaps it is unfair, in that connection, to note that this assembly of farm leaders also appointed a committee. The committee was to be a small working group of farm people, exclusively, and

it was to bring to the delegates before their adjournment some concrete proposals for them to take home and consider. The committee met; but it did not produce any definite proposals to consider. Instead, too, it decided to form a new committee and make a study.

#### **County Officers to Discuss Rural Health**

Serious concern with rural health and medical problems is to be found, also, in the program of the annual County Officers Meeting of the Minnesota State Medical Association to be held Saturday, Feb. 24, at the Saint Paul Hotel.

County medical society officers will discuss the question from many points of view, including the shortage of doctors, hospital needs, nursing problems, the feasibility of rural diagnostic centers, and future public health requirements.

It goes without saying that these discussions will be concerned more with the facts of a difficult situation and less with theory. But the objective will be the same as that of the Chicago meeting of farm leaders; and it is to be hoped that out of the deliberations of both doctors and community leaders, a comprehensive, integrated and progressive policy can be developed upon which all enlightened men and women can base their postwar efforts to improve health.

It is certain that physicians, with much at stake, cannot fail to take full account of the interest manifested by many lay bodies in the extension of their services after the war. If they are to retain leadership in their own field they must be ready with proposals that will satisfy the demand and at the same time safeguard advances already made in medicine and the public health.

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#### **RHODE ISLAND CASH BENEFIT PLAN REPORTED UNSOUND**

In view of the fact that legislation is now being considered in Minnesota calling for cash benefits during sickness as part of the state's social security system, a recent report of one full year's experience with a cash benefit system in Rhode Island is highly significant.

It is reliably reported that the Rhode Island plan is already financially unsound, that in nineteen months of benefit payments not enough had been added to the reserve fund to pay out a single week's benefits at present rates.

Rhode Island is the first state to add cash sickness benefits to its social security structure. It is

one of only four states where employes contribute to the unemployment insurance fund. The unemployment insurance fund mounted during the war period and the cash benefit plan was instituted without great opposition as an alternative to possible demands for reduction of the employe tax. Collections of contributions to the cash benefit fund began seven months before benefits were paid. At that time, April 1, 1943, the reserve fund amounted to \$2,659,937.33. By October 31, 1944, after 19 months of benefit payments, only \$98,747 had been added to the reserve and it is estimated that the fund will be totally exhausted at the end of about two and one half years, if present benefit rates are continued.

### **Employe-Abuse Is Factor**

This early threat of financial collapse in a period of full employment appears to stem mainly from employe-abuse. From April 1, 1943, to March 13, 1944, benefits averaging \$119 were paid to one out of every eight wage earners covered by law. The trend of benefit payments was constantly upward and, contrary to general experience, the payments reached the lowest point in December, January and February and the highest point in May, June and July. Pleasant summer days appear to have played some part in this reversal of ordinary sickness experience, especially in view of the fact that no epidemics were reported during the period in Rhode Island.

Prosecution of violators of provisions of the act has been stepped up, it is reported. After two sentences had been passed by the courts, \$3,500 was returned by persons who appeared to have obtained benefit payments illegally. An investigation is now under way, it is said, on 2,000 cases in which beneficiaries are under suspicion of having received wages for weeks during which sick benefits were also collected.

Initially, certification of eligibility was left in the hands of the worker's private physician. The doctors, themselves, did not ask for this provision and were not consulted at any point during the passage of the legislation. From the start they feared the pressures that might be brought to bear upon them by patients. Subsequent events showed their fears to be justified and the plan was modified to provide for special medical boards to assist in the work of certification. Abuses which marked the later months of the year cannot therefore be charged to collusion of physicians.

## **MINNESOTA STATE BOARD OF MEDICAL EXAMINERS**

**J. F. Du Bois, M.D., Secretary**

### **St. Peter Physician Fined \$250 on Narcotic Charge**

*Re: United States of America vs. Arthur M. Thomson, M.D.*

On January 16, 1945, Dr. Arthur M. Thomson, sixty-seven years of age, St. Peter, Minnesota, was fined \$250 after entering a plea of guilty in the United States District Court at Mankato, to an indictment charging him with four violations of the Harrison Narcotic Law. In the first count Dr. Thomson was charged with unlawfully selling, on September 21, 1944, 100  $\frac{1}{4}$ -grain morphine sulphate hypodermic tablets to Gust C. Lange, an informer for the Government, for \$15.00. A similar sale was made to the same individual by Dr. Thomson on September 26, 1944, for which he received \$20.00. On October 3, 1944, Dr. Thomson sold the same informer 4 grains of cocaine hydrochloride crystals for \$5.00. On October 23, 1944, Dr. Thomson sold Lange 5 grains of cocaine hydrochloride crystals for \$10.00. In addition to the fine imposed by Judge Matthew M. Joyce, the Court placed Dr. Thomson on probation for a period of three years.

Dr. Thomson is a graduate of the Medical School of the University of Minnesota in 1904. He was licensed by examination the same year. For thirty-eight years Dr. Thomson practiced at Cleveland, Minnesota. For the past two years he has been a physician at the State Hospital at St. Peter. Dr. Thomson will have to show cause at the next meeting of the State Board of Medical Examiners, why his license as a physician should not be revoked.

### **Sherburn Physician Pleads Guilty to Narcotic Charge**

*Re: United States of America vs. Merlyn J. Lindahl, M.D.*

On January 16, 1945, Dr. Merlyn J. Lindahl, forty-three years of age, Sherburn, Minnesota, pleaded guilty to an indictment in the United States District Court at Mankato. Dr. Lindahl was charged with three separate violations of the Harrison Narcotic Act. In the first count Dr. Lindahl was charged with illegally selling to one Gust C. Lange, an informer for the Federal Government, on or about September 6, 1944, ten  $\frac{1}{4}$ -grain hypodermic morphine sulphate tablets and sixteen 1/20-grain hypodermic dilaudid tablets for \$6.00. In the second count Dr. Lindahl was charged with illegal sale, to the same individual, on October 3, 1944, of twenty  $\frac{1}{4}$ -grain morphine sulphate hypodermic tablets for \$3.00. In the third count Dr. Lindahl was charged with the illegal sale, to the same person, on October 16, 1944, of twenty  $\frac{1}{4}$ -grain morphine sulphate hypodermic tablets for \$5.00. Judge Matthew M. Joyce of the United States District Court sentenced Dr. Lindahl to pay a fine of \$1,200 on the first count and to stand committed to a penal institution until the fine was paid. On the second and third counts Judge Joyce placed Dr. Lindahl on probation for three years. Dr. Lindahl paid the fine. Before imposing sentence, Judge Joyce strongly rebuked Dr. Lindahl for his misconduct and for "disgracing an honorable profession."

Dr. Lindahl graduated from the Medical School of the University of Minnesota in 1926, and was licensed in Minnesota by examination the same year. He has practiced at Sherburn for the past seven years. Before that time he practiced at Pipestone, Jasper, Winthrop and Braham, Minnesota. Dr. Lindahl has been cited to show cause before the Minnesota State Board of Medical Examiners why his license as a physician and surgeon should not be revoked.

# Minnesota Academy of Medicine

Meeting of November 8, 1944

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club, on Wednesday evening, November 8, 1944. Dinner was served at 7 o'clock and the meeting was called to order at 8:10 by the Vice President, Dr. A. G. Schulze.

There were thirty-five members and two guests present.

Minutes of the October meeting were read and approved.

Dr. Schulze appointed the following committee to draw up a Memorial to Dr. Max Hoffman: Drs. Hall, Zimmermann and Drake.

The scientific program followed.

## THE SURGEON AND THE ULCER PROBLEM

OWEN H. WANGENSTEEN, M.D.  
Minneapolis, Minnesota

### Mortality and Morbidity Caused by Ulcer

Over a thirty-year interval, the mortality from ulcer (gastric and duodenal) in this country has remained at a constant level of slightly more than four deaths per 100,000 of population. The morbidity or illness suffered by patients with ulcer is economically, at least, even more important, in that, for every patient dying of ulcer, there is a far larger number suffering from the disabilities caused by the disorder.

### Ulcer Genesis

The work of our experimental laboratory on the genesis of ulcer has lent renewed emphasis to the stress put upon the acid factor by the Mann-Williamson experiment, in which the alkaline digestive secretions are dumped into the terminal ileum. By stimulating the endogenous mechanism of the stomach to secrete under the stimulating influence of histamine liberated slowly from beeswax, ulcers can be produced in a variety of animals.<sup>2</sup>

Latterly, however, some observations made upon patients and in the laboratory suggest that the vascular factor may play an important role as an initiating influence in the origin of ulcer. Before employment of suction attached to inlying duodenal tubes became frequent practice in surgical clinics in the management of postoperative distension, hematemesis was observed not uncommonly as a postoperative complication of intes-

tinal distension—a condition described by von Eiselsberg in 1899. During the past few years, hematemesis was observed in our clinic in a few patients with fractures.<sup>5</sup> When a third such patient was observed, the observation was submitted to experimental scrutiny in the laboratory. It was found in small laboratory animals in which fractures were produced that, ulcers were provoked not infrequently.<sup>4</sup> Our first thesis was that it was a histamine effect. However, in dogs with isolated gastric pouches, the typical histamine-like effect, viz.: augmentation of gastric secretion, did not occur.<sup>4</sup> It was then found too that ulcer could be provoked in small laboratory animals by the intravenous injection of a small amount (1 c.c.) of human fat.<sup>1</sup> These observations suggest that plugging of end vessels in the gastric mucosa may lower the resistance of the mucosa to digestion by its own secretions. This occurrence raises the question of whether ulcer may be produced by invoking spasm of the gastric muscles or its vessels. Interestingly enough, a few trial experiments indicate that repeated daily injections of pitressin or adrenalin will provoke ulcer in rabbits and guinea pigs.<sup>1</sup> Furthermore, neither of these agents, nor fat injected intravenously, augment secretion from isolated gastric pouches in dogs.

Whereas acid-peptic digestion is probably the penultimate cause of ulcer, it would appear that there are other contributory factors such as arterial spasm which may be responsible for breaking down the resistance of the gastric mucosa to digestion by the acid-peptic juice, thus setting in motion the chain of events which leads to ulcer formation. If colloidal particles such as fat may plug the mucosal end vessels, it may be reasonable to inquire if bacterial emboli might not do the same thing.

### The Indications for Operation in Ulcer

The long hours of starvation between supper and breakfast constitute an important item in rendering the conservative management of ulcer less effective than it might otherwise be. Unlike laboratory animals, whose stomachs normally contain food for some considerable time after its ingestion, man's stomach is frequently empty, especially if the fat content of the ingested food is low, within five hours after eating. Employing the alarm clock to waken the patient at night for supplementary feedings at three-hour intervals helps materially in overcoming the autodigestion suffered on the score of an empty stomach.

Despite employment of all the adjuvant measures which may be invoked to set aside the effects of the acid-peptic digestive juice upon the gastric or duodenal wall, a number of patients develop complications which demand surgical help. Eighty per cent of the 400 pa-

From the Department of Surgery, University of Minnesota, Minneapolis, Minnesota. This paper is based upon researches supported by grants of the Augustus L. Searle and Harry B. Zimmermann Funds for Experimental Surgical Research, the Citizen's Aid Society and the Graduate School of the University of Minnesota.

tients who have undergone gastric resection for ulcer at the University Hospitals during the past six years have had one or more of the complications common to ulcer patients. In 20 per cent of instances, gastric resection has been done because of chronic pain and disability despite carefully supervised medical management.

Obstruction from a para-pyloric ulcer, whether on the gastric or duodenal side, is brought about largely by penetrated or penetrating ulcers. Stenosis, in my experience, is decidedly uncommon. The penetrated ulcer is accompanied usually by an area of induration. This factor, together with spasm and edema, suffice to cause persistent pyloric obstruction.

In this clinic we have come to feel that the bleeding ulcer appears to be a more serious problem than perforation. A policy of operating upon such patients before their condition becomes critical undoubtedly will diminish deaths from hemorrhage. Such operations are trying at best and should be undertaken only by those prepared to deal with the exigencies of a gastric resection under difficult circumstances. Physicians generally will do well to give more careful consideration to the item of well-timed surgery in the management of bleeding ulcer. In our clinic, studied effort to meet adequately the various problems presented by perforation virtually has done away with the serious threat to life formerly presented by this complication. On the contrary, our experience suggests definitely that the hazards of massive hemorrhage, particularly in the patient past sixty years of age, are real.

More and more, physicians generally are becoming alert to the fact that, in many instances, benign and malignant gastric lesions cannot be differentiated with certainty. In instances in which there is a reasonable doubt recourse should be had to operation. In prepyloric lesions, in particular, the likelihood of a persistent defect being neoplastic in nature is real, approximating 25 per cent. Inasmuch as the risks of resection in experienced hands in elective procedures do not exceed 2 per cent, much is to be gained by early operation.

#### **Criteria of a Satisfactory Operation for Ulcer**

The objectives of a satisfactory operation for ulcer are: (1) subjective relief of symptoms; (2) ablation of the ulcer diathesis and prevention of recurrent ulcer; (3) accomplishment of these objectives with minimal risk and without compromising the future for the patient. Such a procedure envisages: (1) extensive gastric (three-quarter) resection; (2) removal of the antrum; (3) removal of the lesser curvature; (4) completion of the operation by the establishment of a gastrojejunial stoma with a short afferent duodenal loop, the anastomosis being made at or just proximal to the ligament of Treitz. An operation which is safe and technically correct assures the recovery of the patient; if the operation is also physiologically sound, the patient will remain well and free from ulcer recurrence. The histamine in beeswax technique has constituted an important means of determining whether a given operation will protect against the ulcer diathesis.<sup>3</sup> Our observations in the experimental laboratory and our experience with the efficacy of operations for ulcer in patients are

in accord and suggest that only operations which meet the requirements outlined above will preclude ulcer recurrence.

The mistrust of internists, actuaries and the military examining boards in the ability of surgeons to perform operations for ulcer which will prevent ulcer recurrence is not without foundation. However, strict adherence to the fundamental principles of a satisfactory operation will reduce stomal ulcer to a minimum. In 400 consecutive gastric resections for ulcer (Group III and IVA operations) only one recurrent gastrojejunal ulcer has been observed to date. In that patient, only 155 grams of stomach was removed (including 6 cms. of jejunum, not weighed separately); the average weight of the excised stomach in gastric resection for unobstructed ulcer is approximately 185 grams. This patient had a gastrojejunal ulcer following an antecedent gastrojejunostomy and was large and hypersthenic; in other words, owing to his obesity, we probably did not remove as much stomach as I thought we had done. This patient was also an inveterate smoker, smoking three to four packages of cigarettes daily. Also about the time that the ulcer recurrence (stomal ulcer) was noted, evidence of heart failure on the score of hypertension was noted. On withdrawal of tobacco and supervised medical management, this patient has done well and radiographic evidence of the stomal ulcer has disappeared.

Latterly, until this recurrence was experienced, I had come to think that the intractable or uncontrollable ulcer was a myth. The very fact that stomal ulcer may develop when the tenets of a satisfactory operation described above are met suggests the importance of meeting all these criteria adequately. If stomal ulcer never occurred after the operation described, one might reasonably ask: Are you not overdoing it?

#### **Causes of Failure After Gastric Resection**

Four patients who had undergone gastric resection for ulcer elsewhere, have been seen in this clinic during the past two years. The causes of recurrent stomal ulcer in these patients fall essentially into the following groups, listed in the order of their importance:

1. The most frequent cause is failure to resect enough stomach. In unobstructed stomachs, the usual weight of the resected specimen removed at the time of gastric resection averages about 185 grams. In three of the patients in this group, the weight of the gastric tissue removed at the time of the second resection was approximately that amount, indicating that the extent of the resection at the first operation was inadequate. Inasmuch as it was necessary to remove so much gastric tissue to leave the customary 25 per cent sized gastric pouch, it is not unlikely that the patients had large stomachs occasioned by pyloric obstruction at the time of the first operation.

2. Employing too long an afferent loop in the gastrojejunal anastomosis invites recurrent ulcer. In this laboratory, the validity of the thesis that a short afferent loop is important in thwarting recurrent ulcer after gastric resection, has been established. The manner in which the long afferent loop predisposes to recurrent stomal ulcer is that it shunts the secretion from the

residual gastric pouch from the richest secretin-bearing area of the bowel, viz: the duodenum and the upper jejunum. After gastric resection, made at the ligament of Treitz or just proximal to it, the regurgitation of barium into the blind proximal duodenal loop is visualized quite regularly on roentgen examination, suggesting that the opportunity for absorption of secretin from the duodenal mucosa is operating in the normal manner.

3. Failure to excise the antral mucosa completely invites recurrence of gastrojejunal ulcer. In two of these four patients, this factor was a contributing cause. That this cause alone may be responsible for recurrent ulcer in patients who have had an otherwise satisfactory gastric resection would appear to have been established. Previously two patients were reported from this clinic who had undergone the three-quarter gastric resection; however, owing to the difficulties presented by an inflammatory mass at the pyloric outlet, the prepyloric antral segment was left, stomal ulcer developed and in one patient, its excision effected a cure; in the other, reresection was carried out after excision of the antral segment with complete relief of symptoms.<sup>5</sup>

4. Failure to excise the lesser curvature completely may invite recurrent stomal ulcer. The lesser curvature, like the antrum and the first portion of the duodenum, are unruled and present relatively smooth mucosal surfaces. Such smooth unruled surfaces are constantly exposed to the acid-peptic digestive action of gastric juice and have far less opportunity to escape than highly rugated surfaces such as the fundic or corporic mucosa. The capacity of the rugated mucosa to move on the muscularis mucosa is well known; thereby, its folds escape constant submersion beneath the acid-peptic digestive fluid. Furthermore, complete excision of the lesser curvature provides the surgeon with the opportunity to remove a good portion of the vagal influence to the residual gastric pouch, thereby lessening materially psychic stimulation of gastric secretion.

### Summary

The importance of arteriosclerosis of visceral arteries and arterial spasm as contributing factors in rendering the gastric or duodenal mucosa susceptible to digestion by the acid-peptic juice is described. It is pointed out also that fat embolism accompanying fractures may plug the end arteries of the gastric mucosa and doing so, initiate the beginnings of ulcer.

Massive hemorrhage from the standpoint of mortality constitutes the most serious complication of ulcer. Recourse to earlier and well-timed operation is suggested as a means of lessening the hazards of hemorrhage, particularly in older people.

A satisfactory operation for ulcer must be safe and technically correct; it must also be physiologically sound to preclude ulcer recurrence. Gastric resection carried out on the Billroth II plan of operation incorporating the following criteria would appear to be a satisfactory operation:

1. Extensive gastric (three-quarter) resection;
2. Removal of the antral mucosa;
3. Completion of the operation by the establishment

of a gastrojejunal stoma with a short afferent duodenal loop, the anastomosis being made at or just proximal to the duodenojejunal suspensory ligament;

4. Excision of the lesser curvature.

### References

1. Baronofsky, I., and Wangensteen, O. H.: Unpublished observations, 1944.
2. Hay, L. J., Varco, R. L., Code, C. F., and Wangensteen, O. H.: The experimental production of gastric and duodenal ulcers in laboratory animals by the intramuscular injection of histamine in beeswax. *Surg. Gyn. & Obst.*, 75: 170-182, (Aug.) 1942.
3. Lannin, B. G., Hay, L. J., Judd, E. S., and Wangensteen, O. H.: Evaluation of a satisfactory operation for ulcer. *Proc. Soc. Exp. Biol. & Med.*, 56:231-233, 1944.
4. Merendino, K. A., Litow, S. S., Armstrong, W. D., and Wangensteen, O. H.: Unpublished observations, 1943.
5. Wangensteen, O. H., and Lannin, B. G.: Criteria of an acceptable operation for ulcer: the importance of the acid factor. *Arch. Surg.*, 44:489-500, (March) 1942.

### Discussion

DR. M. B. VISSCHER, U. of M.: I am anxious to make one or two points. I think the work Dr. Wangensteen has reported is a very excellent demonstration of the usefulness of experimental physiology as an approach to surgical problems. He has given us a very important example of how physiologic studies can be used for improving clinical work. With regard to one or two of the points which he raises, the question of obstruction to the endarterioles is a problem that has not been given the attention it deserves in the field of medicine. We know so little about obstructive phenomena in the blood vessels, yet they are extremely important things. We cannot account on simple morphological grounds for a large fraction of closures of the coronary vessels. The point Dr. Wangensteen raises in the question of particulate matter in the blood—in this instance, fat emboli—is important because practically no work has been done on the suspension stability of blood in disease. The larger or smaller fat droplets in the blood may have to coalesce in order to act as emboli. I think it would be well to ascertain more about this important question. Within the last year Dr. Martinez and I have been working on occlusion of the coronary vessels with suspensions of colloids. The thing that has amazed us is the fact that one can have temporary signs of acute damage to the coronary circulation with characteristic changes in the electrocardiogram and other evidence of acute coronary occlusion and these animals will make almost complete recovery in a week or two. There are obviously potentialities for an adequate collateral circulation. I wonder whether or not cutting off the local circulation does not occur very frequently and the collateral circulation does not develop fast enough in some instances. Perhaps the failure to establish collaterals rapidly is responsible for the condition you have called the ulcer diathesis. We know so little about what the word means.

DR. GORDON R. KAMMAN, Saint Paul: It may seem strange for the neurologist to be interested in gastric ulcer, but I think Dr. Wangensteen's statement as to the penultimate cause is quite correct. It appears that the surgeons are at last beginning to see the light, i.e., they recognize acid as being only the *penultimate* cause. Dr. Wangensteen has said "a-gain and a-gain and a-gain" that acid is the "*penultimate*" cause of gastric ulcer. Now, what is the ultimate cause? Dr. Wangensteen has mentioned histamine, pitressin, adrenalin, and other substances which encourage the secretion of hydrochloric acid and thereby produce ulcer. But he has not gone far enough. I am sure that the psychiatric situations which we encounter can be the precursors of gastric ulcer. That gastric ulcer may be neurogenic in nature was shown many years ago by the celebrated Dr. Harvey Cushing. Dr. Cushing observed and pointed out the fact that in many cases of brain tumor gastric ulcer

was not uncommon. I myself have seen a number of cases of tumor of the frontal lobe in which gastric ulcer was demonstrable by the roentgenogram. This occurs with sufficient frequency to indicate that it is not mere happenstance.

How does this come about? I believe that it is as follows: We know that the cerebral center for emotional reactions is in the thalamus. We also know that the cerebral center for the sympathetic nervous system is in the hypothalamus. We also know that the sympathetic nervous system affects the functions of the abdominal viscera such as the pancreas, stomach, adrenal glands, etc. Therefore, through a cortical-thalamic-hypothalamic-sympathetic-visceral chain of events, it becomes quite clear that emotional stimuli may have a great deal to do with the functions of the abdominal viscera, i.e., the secretion of hydrochloric acid in the stomach and, therefore, the production of gastric ulcer. Therefore, the psychiatric situations, the emotional state, is the *ultimate* cause of gastric ulcer and the hydrochloric acid is merely the penultimate cause.

Dr. Wangensteen has mentioned "medical cures" of gastric ulcer and still the patients have their ulcer. I cannot see that these patients have achieved a medical cure. True enough, they have been filled up with a lot of alkali, they have been given belladonna until their mouths are dry, but no attempt has been made to get in back of the penultimate cause and find out what is the psychiatric situation responsible for the hyper secretion of hydrochloric acid in their stomach. Many ulcer patients whom I have seen have been living in constant fear. Their physicians have told them that if the medical treatment does not work they will have to have three-fifths of their stomachs removed. They have been given a great deal of medicine, meticulous attention has been paid to their diet, they have been given a lot of material which saponifies in the large bowel and causes constipation, and, instead of giving them mental peace and comfort, the treatment has served only to make them more apprehensive and increase the psychiatric reason for their hyperacidity. Another example of a good psychiatric case is the man who could not stop smoking while under ulcer treatment. Dr. Wangensteen says that if this man had stopped smoking the treatment probably would have been successful. I ask what were his psychiatric needs that impelled him to continue to smoke when he had been told that it was harmful for him to do so?

The fact that an ulcer can be experimentally produced in animals does not rule out the neurotic factor. Masserman, of Chicago, has succeeded over and over again in producing experimental neuroses in cats and other animals. I am not going into the methods of procedure, but there is no question but what a cat can be made definitely neurotic by having set up motivational conflicts. I would not be at all surprised if these cats in which neuroses have been experimentally induced would show gastric ulcer after the neuroses have been present for several months.

Summing this whole thing up, I believe that the *ultimate* cause of gastric ulcer is a psychosomatic situation.

DR. WANGENSTEEN, in closing: As I look at it, there are three ways to treat an ulcer: (1) the patient may attempt to eat his way out of his trouble (medical

management); some patients become rather heavy doing it; (2) you may attempt to talk him out of his difficulty (neuropsychiatric treatment); and (3) surgical management. Obviously, the last should be applied only when the first two have failed. We are all rather critical over what constitutes adequate indication for operation for ulcer. I know of no surgeon who accepts patients with duodenal ulcer for operation who have not had adequate and well-supervised medical management. Surgeons realize that what they must do to rid the patient of his ulcer diathesis by surgical means can by no stretch of the imagination be called a simple procedure. It deprives the patient of three-fourths of his stomach and requires an experience on the part of the surgeon in the management of situations which are frequently technically difficult as well as alertness to the choice of procedures which are physiologically sound. No wonder that surgeons like to have patients come for operation for ulcer only when other methods have failed!

It would be proper to inquire, however, in patients who are not getting on too well whether the indication exists for continued medical treatment. On this score up until now, at any rate, it would be fair to say that the most likely cause for procrastination on the part of physicians in recommending earlier operation for many patients who, from the surgeon's point of view, are good candidates for operation, is distrust in the surgeon's ability to cure the ulcer diathesis permanently. Now that the requirements of a satisfactory operation for ulcer have been defined and enough time has elapsed to know that quite uniformly good as well as lasting results follow operation, there is less cause for deferring operation on this pretext. The patient with recurring pyloric obstruction undoubtedly has a *recurring ulcer crater* and should be offered more permanent relief than conservative management affords. The patient with recurring hemorrhage is a particularly good candidate for surgery in that a satisfactory operation removes the Damocles sword which hangs suspended over the head of any patient with a bleeding ulcer.

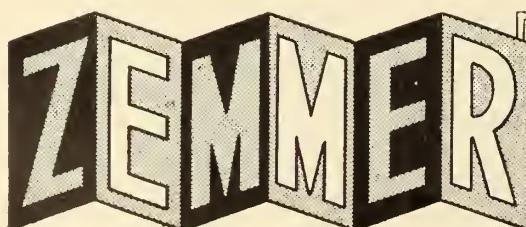
With reference to psychiatric treatment of ulcer, I can only say that I have seen several patients in whom the neurosis cleared up spontaneously after getting rid of the ulcer which was threatening the patient with emotional ruin. There undoubtedly are patients who can be talked out of their difficulty or into feeling better, at least temporarily. I think most of us wonder how lasting such *cures* are. I have heard many a patient say quite ruefully after having all dietary strictures lifted following his operation for ulcer: "Why have I been put off so long?"

The meeting adjourned.

ERLING W. HANSEN, M.D.

*Secretary*

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1. Sperling, L., Weisman, S. and Papermaster, R.: Surgery, 11:600-604 (April) 1942.
2. Boyer, N. H.: J.A.M.A., 122:306-309 (May 29) 1943.
3. McMahon, A. and Nussbaum, R. A.: So. Med. Jl., 33:1127 (Nov.) 1940.

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## In Memoriam

### LOUIS EUGENE DAUGHERTY

Dr. Louis Eugene Daugherty of Saint Paul, Minnesota, died January 10, 1945, at St. Luke's Hospital.

He practiced as a physician and surgeon in Saint Paul for over thirty-five years and at the time of his death was associated with Dr. Harry Oerting at 914 Lowry Medical Arts Building.

Louis Daugherty was born in Duluth, Minnesota, January 12, 1880, the son of Frank B. and Lucy Matile Daugherty. He attended Endion School in Duluth and later attended Shattuck Military Academy at Faribault, Minnesota. Upon completing his course there, he entered the University of Minnesota Medical School and received his degree in medicine in the year 1904.

In 1905, he was married to Etta Francis, who survives him. He is also survived by two sons serving in the armed forces: Lt. Frank B. Daugherty, who is in the Navy, and Capt. Louis E. Daugherty, Jr., serving with the Marine Corps in the Pacific War theatre.

Dr. Daugherty was a member of the staff of St. Luke's Hospital, St. Joseph's Hospital and Children's Hospital. He also served as Chief Surgeon for the Omaha Railway over a period of thirty-five years. He was a member of the Ramsey County Medical Society, the American Medical Association, Minnesota State Medical Association, Minnesota Academy of Medicine and the American College of Surgeons. He was also a member of the Saint Paul Rotary Club and the Saint Paul Athletic Club.

Dr. Daugherty had many friends in the profession throughout the Northwest with whom he enjoyed his vacations fishing and hunting. He will be greatly missed by all of us because of his kindly nature, his unobtrusiveness and his desire to be of assistance to the younger men coming up.

The members of the Ramsey County Medical Society at this time wish to express their sorrow at his passing, and their appreciation of the opportunity to have been associated with such a fine character.—PAUL H. KELLY

### JOHN LEONARD LEE

Dr. John Leonard Lee, formerly of Watertown, Minnesota, died in Minneapolis, December 9, 1944, at the age of forty-nine. Death was due to coronary occlusion.

Dr. Lee was born at Elbow Lake, Minnesota, and received his elementary and high school education there. He studied medicine at Northwestern University, Chicago, and at the University of Minnesota, where he was a member of the Phi Rho Sigma Fraternity. He received his M.D. from the University of Minnesota, and was house physician at the Minneapolis General Hospital in 1921-1922, later taking postgraduate work in surgery at Northwestern University.

He practiced medicine for a short time at Cavalier,

(Continued on Page 152)



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N. D., also at Wahpeton, N. D., before locating permanently at Watertown. He was an active physician and surgeon in Watertown for eighteen years. A heart ailment forced him to retire from practice. He and his family lived in Alexandria, Minnesota, for sixteen months prior to his death.

Dr. Lee was a member of the American Legion Eugene Early Post No. 121, Watertown Lodge No. 50 A. F. & A. M., Scottish Rite and Zuhrah Temple of Minneapolis, Wright County Medical Society, the Minnesota State and American Medical Associations.

Dr. Lee is survived by his wife, daughter Barbara, son John, three sisters, and one brother.

### PETER KRAFT

Dr. Peter Kraft, located at Duluth for the past fifty-one years, died at his home January 12, 1945, following a lingering illness.

Dr. Kraft was born in Oppen, Germany, January 2, 1866. He received his preliminary education at the gymnasium at Mannheim and later at Neustadt. His medical degree was obtained from the University of Munich in 1892. He took postgraduate study at Munich in 1904.

He was a member of the Palestine Masonic lodge, the Scottish Rites bodies, AAD temple of the Shrine, the Interurban Medical Society, the St. Louis County Medical Society and the Minnesota State and American Medical Associations.

Surviving are a daughter, Eleanore Kraft of Duluth, and a stepson, Fred Gaus of New York City.

### WILLIAM L. MENG

Dr. William L. Meng, a member of the Fergus Falls State Hospital staff, died on January 9, 1945.

Dr. Meng was born at Freeberg, Illinois, on July 1, 1879. He first came to Fergus Falls August 1, 1913, as a member of the State Hospital staff. He moved to Bellevue, Illinois, and from there entered the service, going overseas with the Jefferson Base Hospital Unit. In 1921 he returned to Fergus Falls as a member of the State Hospital staff. After six years he entered the Veterans Administration, serving at Marion, Indiana, and at Perry Point, Maryland.

In September, 1911, Dr. Meng married Dr. Eleanor Lovejoy of De Valls Bluff, Arkansas. Although they had retired, they both returned in May, 1943, to assist on the staff of the Fergus Falls hospital due to the shortage of physicians.

One son, William, died in 1913. Besides his wife, Dr. Meng is survived by his other son, Lieutenant Ralph H. Meng, now stationed at Fort Leavenworth, Kansas.

### CHARLES PETER SIGERFOOS

Charles Peter Sigerfoos, Ph.D., for thirty-eight years a teacher of zoology at the University of Minnesota, died at Arcanum, Ohio, November 26, 1944, at the age of seventy-nine.

Dr. Sigerfoos was one of the most popular teachers ever to serve on the faculty of the University, and medi-

## IN MEMORIAM

cal students of many classes as well as those in other departments of the University caught some of his enthusiasm for zoology. He had a marvelous memory and prided himself on his ability to recall the name of any student he had taught during his long period at the University.

### ERNEST Z. WANOUS

Dr. Ernest Z. Wanous, Minneapolis, died January 5, 1945, at the age of sixty-nine.

Dr. Wanous was born January 24, 1875, in McLeod County, Minnesota. He attended Glencoe High School and obtained his medical degree from the University of Minnesota Medical School in 1897.

He acted as assistant superintendent of the Minneapolis General Hospital, and later as assistant superintendent of the State Hospital in Rochester, Minnesota. After taking some postgraduate work at Baltimore, New York, and Rochester, he moved in 1901 to Minneapolis, where he had since practiced surgery, gynecology and obstetrics, sharing offices with his brother, Dr. Edwin F. Wanous, a dentist.

Dr. Wanous was a member of the Hennepin County Medical Society, the Minnesota State and American Medical Associations, and of Masonic Lodge No. 19. Besides his brother he is survived by a sister, Mrs. Gertrude Allen of Minneapolis.

### LLOYD H. ZIEGLER

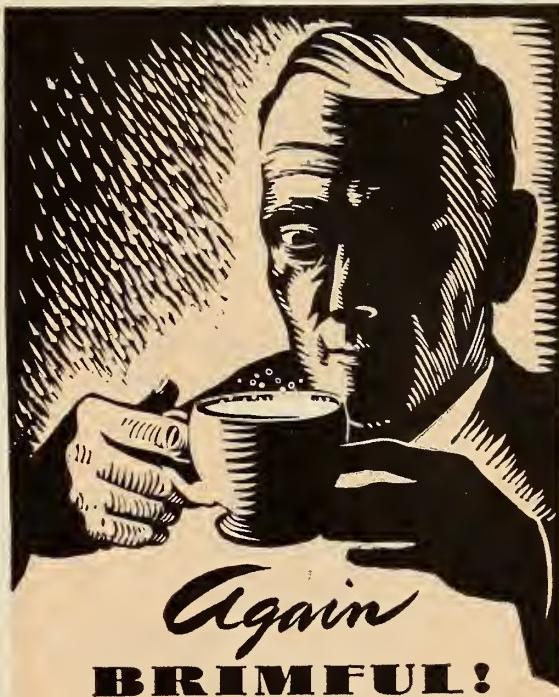
Dr. Lloyd H. Ziegler, a medical director for the past eight years of the Milwaukee Sanatorium at Wauwatosa, died suddenly on January 8, 1945.

Born June 1, 1892, at Bippus, Indiana, Dr. Ziegler received his A.B. degree in 1914 from Valparaiso University, and his A.M. in 1916 from Indiana University, where he was an assistant in psychology from 1914 to 1917. He obtained his M.D. degree in 1914 following study at the University of Minnesota and Indiana University Medical Schools.

He served at various times as assistant clinical director of Government Hospital No. 37 at Waukesha, Wisconsin, as assistant in psychiatry at the Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital, fellow in Medicine at the Mayo Foundation, associate professor at the University of Colorado, associate in neurology at the Mayo Clinic, professor of neurology and psychiatry at Albany Medical College.

Dr. Ziegler was a member of the board of directors of the American Board of Psychiatry and Neurology, a member of the American Psychiatric Association, the Minnesota Society of Neurology and Psychiatry, and numerous other national societies. He was also a member of Phi Beta Kappa, Sigma Xi and Alpha Omega Alpha.

His wife, whom he married in 1918, survives. There are no children.



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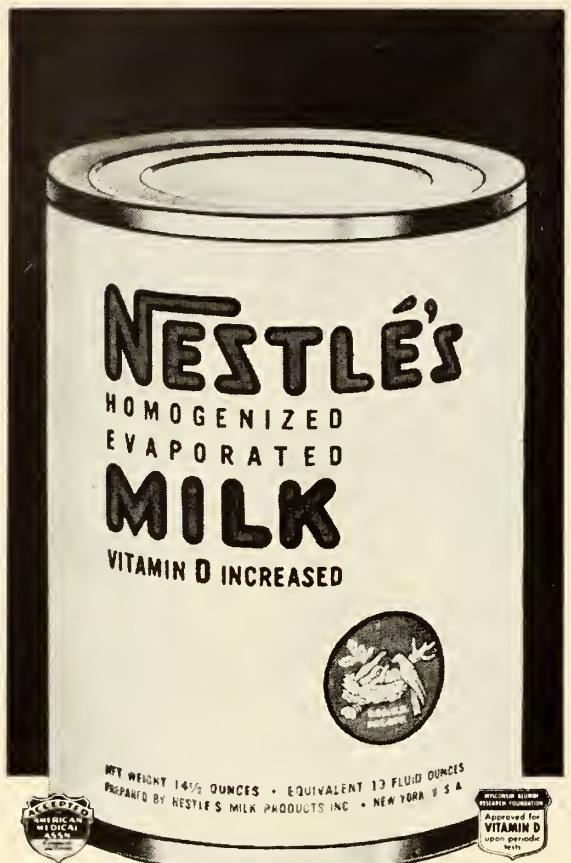
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## Communication

Philippine Islands  
Dec. 27, 1944

Dear Dr. Tuohy:

I received your letter today—indeed a wonderful Christmas present. Our mail has been coming through very sporadically and in minute quantities. We are up in the mts. trying to ferret the Japs out of their prepared positions. Everything has to be brought up by human pack trains, and though mail has a high priority, the "brass" keeps sending up rations and ammo and "to hell with the mail." It is easy to see their logic but it is a little hard on the men's morale.

We expect to have this island completely secured in the near future, as we have the Japs pretty well cut off from their supplies. The Japs are really tenacious however and never give up. If they are not killed by our firing and the situation becomes hopeless they usually commit hari-kari with hand grenades. The wounded also eliminate themselves in this manner. The Jap medical facilities in the units we have fought have been very meager. We have found several dead Japs who have died after having had front-line medical attention. Their splints, litters, dressings, etc., are very poor and few in number. We have captured some of their plasma, too. Their unit of plasma is one-half the size of ours. We have never found any rubber tubing, etc., to indicate that they use it. They must reserve its use to special cases, probably their officers.

The problem of evacuation of litter cases from the mts. is really tremendous. My hat goes off to the litter-bearers. They have one of the toughest jobs in the Army. Only small trails traverse the jungle covering these rugged mts. Oftentimes it is necessary to use a machete to make the trail sufficiently wide to allow a litter squad to pass. It takes 6-7 hrs. for a 16-man litter squad to go a distance of about 2 miles. A litter patient doesn't reach a hospital installation for about 30 hrs. Belly wounds seldom reach the hospital. This is a poor place to get seriously wounded. Personally I am going to keep my head down and hope. If I have to get wounded I hope I get out of the mts. first.

We were relieved yesterday so we will not have to bear the brunt of the fighting for awhile. I have a job on my hands, however, trying to delouse the entire battalion. It seems that during wars the armies are universally bothered by "seam-squirrels." I didn't expect to find them down here in this climate, but we have them in abundance. I am having some delousing bags sent up which use methyl-bromide as the insecticide. I have never used them before, but I surely hope they work. I am getting tired of scratching.

I am receiving a liberal training in tropical medicine here that I don't expect to have much use for when I get back to the States. So far I have been lucky and have not contracted any of the tropical diseases which are so prevalent. We have had very few cases of malaria, for which I am thankful. Our scourge is dysentery of various types. Most of it is bacillary but I have seen several proven cases of amebiasis, hookworm and schistosomiasis. Fungus infections and indolent tropical ulcers are forever present and are very difficult to treat. We had dengue fever go through the Bn. shortly after we hit the island, but so far our temporary immunity has prevented recurrences.

I surely am going to go back to school when I get out of the Army. I will have forgotten everything I ever knew by the time I am discharged. I haven't seen a JOURNAL or any other medical literature for about a year. In that respect the Army is really deficient. I would like to take a residency or a fellowship in sur-

## COMMUNICATION

gery but I have no idea where I should go. I have a master's degree in Anatomy that I could use as a minor towards a Ph.D., but I don't know whether I can afford to spend that much more time in school. I would greatly appreciate your advice. I think all the recent medical graduates, as well as some of the older men, are going to require at least refresher courses, to adequately practice medicine after we get out of the armed services. It really is going to take a lot of work to plan courses, etc., to accommodate all of us.

When I get a chance I will send you some more Jap souveniers. At the present time transportation facilities are so congested that they will not allow it. As far as the "smell" is concerned, all Jap clothing, personal effects, et cetera, smell the same. I haven't figured out what it comes from but it may be something the equivalent to our moth balls.

I must close this letter before it becomes too voluminous. Greetings to all.

(Signed) HOWARD FRYKMAN

NOTE: Lt. Howard Frykman graduated from the University of Minnesota Medical School in March, 1943, and interned at St. Mary's Hospital, Duluth, before entering the Army in December, 1943.

### **EXPANSION OF MEDICAL SCHOOL POSTGRADUATE INSTRUCTION**

*(Continued from Page 141)*

months' basis and intensive refresher courses of a minimum of three months for small groups. These courses will consist of lectures, bedside clinics, round-table discussions, and ward rounds.

Such an expansion will require additional funds. At present only ten fellowships are provided for, and because of the war these are not filled. It is hoped that the necessary funds will be available. As members of the Medical Corps are discharged and seek to avail themselves of the postgraduate training, every effort will be made to add to the teaching personnel and organize the courses. This will necessarily be a gradual process depending on the rapidity with which the medical officers are discharged.

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**REPORTS and ANNOUNCEMENTS**

**MEDICAL BROADCAST FOR FEBRUARY**

Feb. 3—9:15 A.M.	WCCO	Social Hygiene
Feb. 3—11:30 A.M.	WLB-KROC	Medicine in the News
Feb. 7—11:30 A.M.	WLB	Your Weight and You
Feb. 10—9:15 A.M.	WCCO	*Tuberculosis—Cause and Recognition
Feb. 10—11:30 A.M.	WLB-KROC	Medicine in the News
Feb. 14—11:00 A.M.	WLB	Disorders of Teeth and Gums
Feb. 17—9:15 A.M.	WCCO	*Tuberculosis—Treatment and Results
Feb. 17—11:30 A.M.	WLB-KROC	Medicine in the News
Feb. 21—11:00 A.M.	WLB	Care of the Teeth
Feb. 24—9:15 A.M.	WCCO	Stomatitis
Feb. 24—11:30 A.M.	WLB-KROC	Medicine in the News
Feb. 26—4:15 P.M.	WCCO	Your Hospital in Wartime
Feb. 28—11:00 A.M.	WLB	Diseased Tonsils and Adenoids

\*Keyed with subject of the month—Minnesota State Medical Association Packet of Information for Members.

\* \* \*

**REFRESHER COURSE**

The College of Medicine, University of Illinois, announces the fifth semi-annual refresher course in laryngology, rhinology and otology for the week of March 26 to 31 inclusive. While some clinical instruction will be included, the course is mainly didactic and designed primarily for ear, nose and throat specialists. Registration is limited to thirty and the fee is \$50.00. Applications should include detailed information concerning school, graduation, training and experience. Address Dr. A. R. Hollender, Chairman, Refresher Course, Department of Otolaryngology, University of Illinois, College of Medicine, 1853 West Polk Street, Chicago 12, Illinois.

\* \* \*

**RED RIVER MEDICAL SOCIETY**

The Red River Medical Society elected Dr. John H. Cameron, of Erskine, president of the organization at the annual meeting in December. Dr. C. H. Holstrom was the retiring president. Dr. O. K. Behr, of Crookston, was made vice president; and Dr. C. L. Oppgaard, also of Crookston, was re-elected secretary-treasurer. Two sound movies, "Inguinal Hernioplasty" and "Asphyxia Neonatorum" were features of the program.

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# ♦ Of General Interest ♦

Dr. F. T. Sorum has installed a late model shock-proof x-ray machine in his offices in Jasper.

\* \* \*

Dr. and Mrs. H. L. Lamb have closed their home in Little Falls and gone to Tucson, Arizona, where they expect to remain permanently.

\* \* \*

The title of officer of the Order of Boyacá has been conferred on Dr. Howard R. Hartmen, Mayo Clinic, by President Alfonso Lopez, of Columbia.

\* \* \*

Dr. R. S. Hegge was named successor to Dr. J. Morrow as health officer for Mower County by the county commissioners at their meeting in Austin the early part of January.

\* \* \*

The staff of Eitel Hospital, Minneapolis, has elected Dr. William R. Jones, chief of staff. Dr. Alton Olson was made Dr. Jones' assistant, and Dr. Leo Culligan, secretary-treasurer.

\* \* \*

Dr. George G. Stillwell, Jr., Mayo Clinic, attended sessions of the American Society of Tropical Medicine held in conjunction with the meeting of the Southern Medical Association in St. Louis.

\* \* \*

Lake County Board of Commissioners, meeting in Two Harbors, appointed Dr. L. M. Hammar, county physician and Dr. R. F. Mueller, health officer. Both appointments are for the year 1945.

\* \* \*

In compliance with a request from the War Committee on Conventions, The Institute of Medicine of Chicago has cancelled its Midwest Conference on Rehabilitation announced for February 12.

\* \* \*

Dr. R. K. Ghormley, of the Mayo Clinic, made an observation tour of army hospitals in Texas from December 4 to 14. In addition to addressing staff meetings, Dr. Ghormley conducted seminars and conferences.

\* \* \*

Dr. Oscar A. Billeter, formerly associated with Dr. Claire L. Straith at Detroit, Michigan, has moved to Minneapolis to be associated with Dr. Carl W. Waldron, 537 Medical Arts Building, in plastic and reconstructive surgery.

\* \* \*

Dr. C. T. McEnaney, physician and surgeon (Captain McEnaney in military circles) has been honorably discharged after twenty-seven months of service, most of the time in England. Dr. McEnaney, who opened offices in Owatonna in 1931, has resumed his practice there.

\* \* \*

The Board of Trustees, Meharry Medical College, have announced the following appointments, effective

January 1, 1945: Dr. M. Don Clawson, president, succeeding Dr. Edward L. Turner, and Dr. Murray C. Brown, director of medical education.

\* \* \*

The hospital association of St. Andrews' Hospital, Minneapolis, elected Dr. I. A. Preine chief of staff at their annual meeting in January. Dr. C. N. Borman was made vice president of staff, and Dr. Laurence Cady, secretary-treasurer. Dr. Preine was also chosen as secretary-treasurer of the board of directors.

\* \* \*

Dr. Henry Pinkerton, Professor of Pathology, University of St. Louis, was the speaker at the meeting of the Minnesota Pathological Society in the Medical Science Amphitheater, University of Minnesota, on January 16. Dr. Pinkerton's subject was "The Rickettsial Diseases."

\* \* \*

Dr. P. G. Hooper was elected chairman of the staff of Immanuel Hospital in Mankato at the annual meeting on December 28, 1944. Dr. Roger Hassett was made vice chairman, and Dr. G. R. Fugina, secretary. The business of the evening was preceded by a turkey dinner.

\* \* \*

Captain Erhard E. Zemke, who has been on active duty with the Army Medical Corps since October 21, 1942, has been returned to civilian status because of permanent physical disability. After completion of a postgraduate course at the University of Minnesota, Dr. Zemke will resume his practice in Fairmont.

\* \* \*

"Progress in Conquest of Pain by Anesthesiology" was the subject of the paper presented by Dr. John S. Lundy, of the Mayo Clinic, at the Sixth Annual Scientific Award Ceremony of the American Pharmaceutical Manufacturers' Association in New York in December.

\* \* \*

Friends and colleagues of Dr. Rigler, Professor and Head of the Department of Radiology, have endowed an annual lectureship at the Minnesota University, which is to be known as the "Leo G. Rigler Lectureship in Radiology." The gift has been made in token of their esteem and appreciation for Dr. Rigler's contribution to the teaching and practice of medicine.

\* \* \*

Dr. Byron B. Cochrane, an assistant to Dr. E. K. Bowles at the Mesaba Clinic in 1939 and 1940, has been promoted to Lieutenant Colonel by the U. S. Army in recognition of "meritorious service in connection with military operations against the enemy from January 30 to February 8, 1944."

Dr. Cochrane, whose home is in Saint Paul, graduated from the University of Minnesota Medical School in 1938.

## OF GENERAL INTEREST

Dr. William C. Rose, professor of biochemistry, University of Illinois, presented the annual Elias Potter Lyon Lecture at the University of Minnesota on January 18, 1945. Dr. Rose's subject was "The Amino Requirements of Man." The lectureship, which is a memorial to Dr. Elias Potter Lyon, dean of the Medical School from 1913 to 1935, was established in 1937.

\* \* \*

The Medical and Surgical Division of the U. S. Treasury's Office of Surplus Property offers for sale 27,900,000 3x5 inch sterilized cotton-filled gauze pads with cotton ties, each package containing four safety pins and 500,000 larger pads measuring 5x6 inches. Those interested should contact the nearest regional Office of Treasury Procurement at Chicago, Illinois.

\* \* \*

Dr. Charles F. Code, of the Section on Clinical Physiology of the Mayo Foundation at Rochester was awarded the second prize of the Marcelle Award for his studies of the role of histamine in the production of anaphylactic and allergic reactions. The first prize went to Dr. Mary Loveless of New York City. The prize was awarded by Marcelle Cosmetics, Inc.

\* \* \*

Dr. F. H. Krusen, Mayo Clinic, presented a paper on "Recent Developments in Physical Medicine" at the meeting of the Southern Medical Association in St. Louis. During the same week Dr. Krusen addressed the National Federation of Women's Clubs at Madison Square Garden in New York on "Physical Medicine and Rehabilitation."

Drs. Harrington and Meyerding, of the Mayo Clinic, gave addresses at the meeting of the Western Surgical Association held in Chicago. Dr. Meyerding's subject was "Chronic Sclerosing Osteitis," and Dr. Harrington's was "Pulsion Diverticulum of the Hypopharynx at the Pharyngo-esophageal Junction: Surgical Treatment of 140 Cases."

\* \* \*

Major John H. Grindlay, chief of professional medical services at McGuire General Hospital, Richmond, Virginia, has been awarded the Bronze Star Medal for meritorious service while serving under General Stillwell on the historic march from Burma to India. The presentation was made by Colonel P. E. Duggins, commanding officer. Major Grindlay is a former fellow in surgery, Mayo Foundation.

\* \* \*

Announcement has been made of the establishment of the "J. B. Johnston Lectureship in Neurology" at the University of Minnesota. The founder is Mr. Johnston's widow, Mrs. J. B. Johnston, of Los Altos, California.

Dr. Johnston was Professor of Comparative Neurology in the Medical School from 1908 to 1915, and Dean of the College of Science, Literature and Arts from 1916 to 1937. Presentation of this lecture by outstanding neurologists is anticipated.

\* \* \*

Creation of the "Frederick B. Wells, Jr., Trust Fund," established for the support of investigation and better treatment of dementia praecox and allied conditions, has



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OF GENERAL INTEREST

been unanimously approved by the Minnesota University Board of Regents. Income from the fund will be paid to the University in perpetuity in the amount of approximately \$2,400 annually. Expenditures are to be made at the discretion of the Dean of the Medical School and the Head of the Department of Neuropsychiatry.

\* \* \*

St. Joseph's Hospital staff, Brainerd, elected officers for the year at the annual dinner meeting on January 11.

Dr. M. P. Gerber was made chief of staff, succeeding Dr. John Thabes, Jr. Dr. O. E. Hubbard is the new vice chief and Dr. V. E. Quanstrom, secretary-treasurer.

The banquet, which was given by the Sisters of the Order of St. Benedict, was attended by twenty doctors. Speakers of the evening included Dr. M. G. Gillespie and Dr. F. Hirschboeck, both of Duluth. Dr. G. L. Berdez, also of Duluth, was one of the special guests.

\* \* \*

Captain Thomas B. McGath, MC, USNR, who has been on active duty since June, 1940, has been appointed to the recently created board designed to select naval reserve officers for transfer to the regular Navy. The board, consisting of nineteen members, is headed by Rear Admiral Laurence T. Dubose. Captain McGath has served in Cuba, China, Australia, South and Central Pacific. Hereafter Captain McGath will be stationed in Washington, D. C.

\* \* \*

Dr. P. E. Hermanson, of Hendricks, discussed "The Community Hospital" at a recent luncheon meeting of the Rotary Club in Marshall, which was also attended by the city's Postwar Planning Commission, the Civic and Commercial Association and the Junior Chamber of Commerce. Dr. Hermanson is particularly qualified to present this subject since the Hendrick's Community Hospital has been in successful operation since 1925.

\* \* \*

Dr. P. F. Eckman was elected chief of staff of the Miller Memorial Hospital in Duluth, at the staff dinner on January 8. Other officers elected at this time were: Dr. A. L. Abraham, vice chief of staff; Dr. A. J. Spang, secretary-treasurer; Dr. Mario Fischer and Dr. R. J. Moe, members of the executive committee. Dr. Moe is the retiring chief of staff. The meeting was addressed by Joseph H. Jordan, Northern Minnesota chairman of the Committee for Economic Development, who spoke on postwar planning.

\* \* \*

Dr. A. J. Henderson, who has been practicing in Kiester for the past twenty-five years, has opened offices in the McNerney Building in North Saint Paul. Dr. Henderson received his degree from the University of Illinois Medical School in 1919 and interned at the Swedish Hospital in Minneapolis. He is a member of the Blue Earth Valley Medical Society, the Minnesota State Medical Association, and the American Medical Association.

\* \* \*

Staff members of Loretto and Union hospitals, New Ulm, elected their officers for the coming year at their annual meetings on January 11. Dr. Theodore R.

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## OF GENERAL INTEREST

Fritzsche was chosen president of Loretto Hospital. Dr. H. A. Vogel is the new vice president and Dr. O. B. Fesenmaier, secretary. For Union Hospital the following officers were elected: president, Dr. Theodore R. Fritzsche; vice president, Dr. O. B. Fesenmaier, and secretary, Dr. J. H. Vogel.

\* \* \*

Dr. Charles Germo, of Balaton, has been presented with a book of more than one hundred letters of appreciation for his devoted service to his community over a period of almost fifty years. Compilation of the book, which is handsomely bound in leather, was under the direction of the Balaton Community Club. Excepting the period when he was in service during World War I, Dr. Germo has been in continuous practice in Balaton since September 1, 1895. Both his sons, Willard and Severt, are now serving in the armed forces.

\* \* \*

Dr. Charles R. Drake is one of a committee of five appointed to take action on the proposed conversion of the Motley School in Minneapolis—now closed—into a heart hospital for children. Fifty thousand dollars has been offered for the building by the Variety Club, an organization of men in the entertainment field, with the intention of deeding it to the university with the proviso that it be used for the aforementioned purpose. Drs. C. J. Watson and W. W. Spink, of the University Medical School, who have approved the proposal, stated that they believed the movement might eventuate in one of the finest heart hospitals in the country.

The Minneapolis Academy of Medicine celebrated its twenty-fifth anniversary on January 15 with a dinner meeting at The Leamington.

Captain Donald McCarthy, chief of medicine, Great Lakes Naval Training Hospital, a former member of the Academy, discussed "Penicillin Therapy of Meningococcic Meningitis." Captain McCarthy, the highest ranking naval medical officer from Minneapolis, has had nearly two years of sea duty in both the Atlantic and Pacific. Thirteen other members of the Academy are also in military service.

Dr. Ernest R. Anderson is president of the organization; Dr. Jay C. Davis, vice president; Dr. Cyrus O. Hansen, secretary; and Dr. Thomas J. Kinsella, treasurer.

\* \* \*

Captain Bradley C. Brownson, flight surgeon of a medium bombardment squadron in the Central Pacific area, has been awarded the Air Medal. The citation reads: "\* \* \* for voluntary and meritorious participation in six combat sorties over heavily-defended enemy bases during the period of January 17, 1944, to April 6, 1944, in order to study reaction of crews to danger and the fatigue factors involved."

Lieutenant General Millard F. Harmon, commanding general of the Army Air Forces, Pacific area, and Colonel J. R. Anderson, chief of staff, conducted the presentation ceremonies at a base of the 7th Army Air Force in the Hawaiian Islands. Captain Brownson was formerly a fellow in surgery at the Mayo Foundation.





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Under the heading, "A Tribute to Dr. Hyer," the following resolution was published in the *Bulletin of the Columbus Academy of Medicine*, December, 1944:

\*\*\*BE IT RESOLVED, by the Ross County Academy of Medicine, that in the death of Dr. Carl A. Hyer, Columbus physician for more than twenty years, the profession has lost a most valued member.

AND BE IT STATED, that on October 5, 1944, eight days before his death, Dr. Hyer gave a most masterful address before our society upon the subject, "Cirrhosis of the Liver," from the suffering of which disease Dr. Hyer gave much relief to mankind.

AND BE IT FURTHER RESOLVED, that copies of this resolution be sent the son, David, the secretary of the Columbus Academy of Medicine for reading before that Academy, and to the editor of the *Ohio State Medical Journal* for entry upon the pages of that publication.

Dr. Hyer was born at Bloomingburg, Ohio, on October 28, 1891. He received a B.S. degree from Ohio Wesleyan University in 1913 and an M.D. from Ohio State in 1920. He interned at Columbus Hospital from May, 1920, to June, 1921, and he was a fellow in medicine at the Mayo Foundation from June, 1921, to June, 1924, when he entered general practice in Columbus, Ohio.

\* \* \*

Although it is believed that most of the financing of the proposed Mayo Memorial will be assumed by citizens of Minnesota eager to honor their beloved "country doctors," the committee intends publicizing the movement nationally and, insofar as the war permits, internationally, so that every one who has benefited by the notable contributions of the Doctors Mayo to medical science may have the privilege of being represented.

The Memorial, a twelve-story building costing ap-

proximately \$2,000,000, which will be used as a center of medical research, teaching and administration, will be located in the quadrangle of the University Hospitals on the University of Minnesota medical campus.

Dr. Donald J. Cowling, chairman of the committee, stated that numerous other suggestions were carefully weighed before reaching the decision that nothing could be more suitable to the memory of the Mayo brothers than a research center located at the university to which both had devoted so much time, interest and money.

\* \* \*

Dr. and Mrs. D. Kalinoff of Stillwater left in January to spend the remainder of the winter in Arizona.

\* \* \*

According to the University of Minnesota Bulletin in the year ended June 30, 1944, there were 12,633 collegiate students, 23,806 noncollegiate, and 11,503 extension students in attendance, compared with 21,688 collegiate, 15,730 noncollegiate, and 10,900 extension students in the year ended June 30, 1941.

\* \* \*

Lt. Com. Emmet Robert Samson recently returned to Stillwater for a brief visit prior to his marriage to Lilian Anderson, of Stillwater, at Rice Lake, Wisconsin, January 13, 1945. Dr. Samson entered active service with the United States Naval Reserve April 5, 1943, at San Diego, and has seen active service in the Pacific from Guadalcanal to Luzon. His father died recently at Cameron, Wisconsin. Dr. Samson, accompanied by his bride, reported to Cornwallis, Oregon, January 22, for further orders.



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## ANNOUNCES CONTINUOUS COURSES

**SURGERY**—Two-week Intensive Course in Surgical Technique, starting February 12, and every two weeks during the year. One-week Course Surgery of Colon and Rectum, February 19 and April 16. 20-hour Course in Surgical Anatomy, March 26.

**GYNECOLOGY**—Two-week Intensive Course, February 26 and April 23.

**OBSTETRICS**—Two-week Intensive Course, February 12 and April 9.

**ANESTHESIA**—Two-week Course, Regional, Intravenous and Caudal Anesthesia.

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## Cancellations

Because of the transportation crisis, the American College of Surgeons has announced the indefinite deferment of the 1945 series of War Sessions, four of which had been scheduled for February.

\* \* \*

## Chicago Clinical Conference Cancelled

The Annual Clinical Conference sponsored by the Chicago Medical Society, which was to have been held at the Palmer House in Chicago on February 27 to March 1, inclusive, has been cancelled because of the governmental ban on conventions.

\* \* \*

## Graduate Training in Physical Medicine

The Regents of the University of Minnesota recently accepted a special gift of \$40,000 from the Baruch Committee on Physical Medicine for the support of graduate training in this important and rapidly expanding field. For a number of years a course for the training of physical therapy technicians has been conducted by the Medical School and a similar course for the training of occupational therapy technicians is under consideration. The grant from the Baruch Committee will supplement the training program for technicians and will be used to provide certain additions to the teaching staff and fellowships for physicians to be trained as specialists, with special emphasis on teaching and investigation, in this field. This program will be closely integrated with the research program in physical medicine which is being supported by a five-year grant from the National Foundation for Infantile Paralysis.

\* \* \*

## Gift for Cancer Research

Mrs. George Chase Christian, President of the Citizens Aid Society, recently announced distribution of the remaining capital assets of that Society which for thirty years has supported various cultural, educational and welfare activities in Minneapolis. Cancer has been one of the special interests of this Society since 1924 when the trustees provided funds for the construction of the Cancer Institute addition to the University Hospital. This institute is a memorial to Mr. George Chase Christian, the son of Mr. Henry Christian who established and endowed the Citizens Aid Society. Since the construction of the Cancer Institute, additional grants have been made to the Medical School from time to time for special equipment and for the support of educational work and research in the field of cancer. In the final distribution of the assets of the Citizens Aid Society, the trustees set aside funds in the amount of approximately \$16,000 for the completion of several research projects of the Medical School which they had agreed to support and in addition set up a trust fund to provide \$12,000 annually for a period of ten years for the support of the work of the Cancer Institute. This fund will be utilized for research and educational work in cancer.

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MINNESOTA MEDICINE

# Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 28

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# Minnesota Medicine

*Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society*

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## RESPONSIBILITY OF MEDICINE

L. W. LARSON, M.D.

Bismarck, North Dakota

IN these days when after three years of total war, we are beginning to see a rift in the clouds and are justified in the hope that the war's end is not too far distant, it is proper that all groups of our citizens should be thinking of the postwar period. Our profession can point with pride to its contribution to the war effort. Fully 60,000 of its members have entered the military services and have given fully of their talents, and many their lives, in order that the forces which oppose us may be conquered and some, if need be, destroyed. Those who have remained to serve the home front have given their all to supply medical service, many with sacrifice of health and even of life. What will the world be like when this holocaust is over? To what kind of a United States will our colleagues who are in the service return? Will the practice of medicine as our predecessors developed it, survive, or will it be caught in the tide of social change that has been swelling for a decade and is being accentuated by the war? The answers to these questions may of necessity be vague, as yet, but the problems these questions raise demand the careful study of, and mature judgment in, their solution by every practitioner of medicine.

The medical profession is, I believe, committed to one objective, which is contained in the platform of the American Medical Association, "*Availability of Medical Care of a High Quality to Every Person in the United States.*" This objective implies the quality and distribution of medical care. The former involves medical training,

undergraduate, graduate and postgraduate. The latter involves economic and social problems.

Is there anything wrong with the quality of American medicine today, and, if so, can anything be done about it? Having graduated in medicine only twenty-two years ago, it may be presumptuous on my part to discuss this particular phase of the problem. However, the nature of my specialty, pathology, and the interest I have tried to take in the public relations of organized medicine, and in medical legislative matters in my State, have led me to the conclusion that the standard of medical practice in this country is not what it should and could be. I will insist, with you, that it is the best in the world. But is that good enough? One might argue that our shortcomings are completely overshadowed by our daily successes, but if we analyze the viewpoints of our critics, who both in and out of Government circles, have a powerful influence over public opinion, we will find too often, I am sorry to admit, that they have either had an unfortunate personal experience with doctors or know of some friend or acquaintance who has had one. As a rule this episode, when divulged, involves a sin of omission rather than one of commission. Too many early cancers are being overlooked because the physician either did not know the early signs of hidden malignancies or was reluctant to refer a patient to someone else for fear he might lose the patient; diabetes is frequently unrecognized simply because a urinalysis was not done. If this thesis is correct, and I believe it is, we must assume the responsibility for improving the

President's address before the North Central Medical Conference, St. Paul, Minnesota, December 10, 1944.

standard of medical practice in the postwar period. Surveys among medical officers indicate two definite opinions in their minds; the overwhelming majority want to return to private practice as soon as possible, and fully 80 per cent desire a course of some sort to refresh their memories of, and to acquaint them with, the progress made in the diagnosis and treatment of civilian ailments. A large number of these men, possibly fifteen thousand, will never have practiced a day when they are released from the service. The remainder have dealt almost exclusively, while in uniform, with age groups and medical problems which will be uncommon in their private practices. Where will they go for their postwar courses, short or long? The Council on Medical Education and Hospitals estimates that the number of residencies, especially in medicine and surgery, will have to be doubled. This will mean effective co-operation on the part of hospitals and their medical staffs. Hospitals which trained few if any interns or residents in the past will have to take stock of their facilities and expand them if possible. The need for an effective appeal by organized medicine to its members to assist in this great effort is apparent if the returning medical officer is to receive the consideration he is entitled to, and the public he will later serve is to receive a high quality of medical service.

Unfortunately, the problem does not end there. The rank and file of practitioners in civilian practice, both middle aged and elderly, must be encouraged to attend medical meetings and refresher courses. It is the responsibility of organized medicine to see to it that these courses and meetings stress the practical rather than the theoretical. Recourse to the undergraduate form of teaching, in which the fundamentals of diagnosis and treatment are emphasized again, and again, and again, may have to be resorted to in many instances.

What about the medical education of the future? I believe we not only have the right to be concerned over this problem, but it is our duty to help guide, if possible, the trends in medical education. The Council on Medical Education and Hospitals has done a magnificent job in eliminating diploma mills and inferior schools, and has set a high standard for the present-day medical school to attain. But has the medical graduate in recent years been sufficiently equipped during his schooling and hospital experience to establish and

maintain a high quality of medical service? Is there any virtue to the argument that the recent graduate has been exposed to too much science and too little of the practical, and that the art of medicine has been almost entirely neglected? From experience with quite a number of medical neophytes, I believe there is. Medical educators are not alone to be blamed for this condition for they are subject to pressures from all sides to increase the scope of work to be covered, and especially by the tendency of us all to judge the excellence of a medical school by the research and papers it turns out rather than the knowledge of practical medicine with which its graduates leave the school. It would seem that the time has come when the doctors of this nation should interest themselves in the future of medical education and not leave it entirely in the hands of deans and professors, many of whom have had little or no experience in the private practice of medicine.

The second great problem confronting the medical profession is the distribution of medical care. Its solution involves economic and social problems. It is apparent that if the present wartime prosperity could be extended into the postwar period we would have little to worry about, for when people have plenty of money to spend, and especially if the supply of luxury items is limited, they will consult their physicians freely and will pay their medical bills gladly. However, no one except the impractical dreamer can hope for anything but a return of difficult times unless our leaders and experts, in and out of government, display a greater talent for dealing with economic problems than they have in the past. When the leveling off process does arrive, whether it be sooner or later, there will be increased demands for extensions of medical services. The Wagner-Murray Bill in its present form will probably be defeated but there will be other health bills introduced. They will undoubtedly follow the trend of social changes which is gradually sweeping the world and is threatening to liberalize even conservative England.

What are the causes of this attack upon the private practice of medicine and is it the responsibility of medicine to remove them? One factor is the uneven distribution of physicians in which physicians tend to concentrate in the larger centers of population. The emphasis on specialization in medicine has been a contributory factor. But the absence of adequate hospital and diagno-

tic facilities and consultants, plus the desire on the part of most physicians to live near to recreational, cultural, and educational advantages has discouraged young physicians from settling in small communities. It has also driven many practitioners from the small community to the larger center. In the smallest communities the refusal of the people to patronize the hometown doctor and their tendency to drive to the larger centers for medical care has forced the physician to move elsewhere. Will the plans proposed by the United States Public Health Service for the establishment of diagnostic centers in the smaller communities entice physicians to them? I doubt it, for at best such diagnostic centers cannot satisfy all the objections to this type of practice. Nor will they insure the patronage of the citizenry provided it has gasoline and tires to travel to the larger centers for medical care.

The medical profession faces the responsibility of preventing ill-advised cures for this condition, which are being proposed by some high government officials and loudly acclaimed by the "well doers." For if the "plans" materialize and then fail, the profession will be blamed for their failure.

What can the medical profession do about this problem of unequal distribution of physicians? It can and should emphasize to the public the important role played by the general practitioner in the general health picture. It can also encourage the development of better highways for the farmers and the establishment of low-cost ambulance service so that any person, regardless of location, can be transported to a center in a matter of minutes or a few hours. In addition it can consider ways and means of encouraging young medical graduates to settle in the smaller centers. In this connection, the great length of time necessary at present to complete a medical education and the expense involved has led some to believe that the problem cannot be solved unless the medical course is materially shortened. I would be the last in the world to advocate any change in this respect that would lower the standards of medical service, but I am fearful that some such changes will be forced upon us unless we, or others, do something to improve the situation.

Another factor in the problem of distribution of medical service is that of cost. Every survey of public opinion upon medical service which has been made lately indicates that the majority of the

people want some method whereby they can cushion the expense of a catastrophic illness. This is precisely what the planners would do through the Wagner-Murray Bill. Is it the responsibility of medicine to provide the pattern for repaid medical insurance and to subsidize it, or should the insurance companies assume this responsibility if government does not do it? Many of our medical leaders are earnestly opposed to it, while others believe that we must sponsor our own plan in order that the control of medicine will remain in the physicians' hands. The decision must be made only after all the problems involved have been carefully scrutinized and the experience of established service plans have been studied. Every physician must voice his opinion *before* a plan is instituted, but after it is adopted and placed in operation it is the duty of every physician to co-operate fully. If he fails to do so, the plan will fail and the profession as a whole will be discredited. Until private insurance companies enter the field of medical service insurance, it is the responsibility of medicine to at least study the feasibility of physician-sponsored plans, and, where they are in operation, to support them.

I am convinced that we as a profession must improve our relations with public health departments. There has been too much tendency in the past, at least in my State, for physicians to frown on any extension of health department facilities. I appreciate full well the apprehension on the part of most physicians, that such extensions are the entering wedge to state medicine. In some instances they can be so construed, but in most instances they are simply manifestations of the people's desire for more public health facilities.

The appalling rejection rate under the Selective Service System has focused the attention of the entire country on the health status of our young people. Unfortunately the figures have been used as a basis for an unjust criticism of the medical and dental professions. We all admit that medical care is an important factor contributing to better health but it is by no means the only one. Health education, sanitation, hygiene, diet and nutrition, infant care, and a proper recreational and physical fitness program, are equally important, if the health of the coming generation is to be improved. They fall within the province of public health officials as well as educators in our secondary schools, colleges and universities. The medical profession can assist the agencies

## ESSENTIAL THROMBOCYTOPENIC PURPURA—HERTZOG

these people represent by supporting their programs. Have we done our part to reach an understanding with health officers and departments as to what constitutes legitimate public health activities and the private practice of medicine? We haven't done it as yet in our State. I believe we can get together; and when an agreement is reached we can give the health department unstinted co-operation in the furtherance of its program.

This inadequate analysis of the problems we face, will, I hope, stimulate some discussion at this Conference. It has been said that responsibility is a twin, and the name of its brother is opportunity. Our profession faces grave responsibilities but it also has great opportunities for service. The reward for our success will accrue to the people whom we serve, and the profession which we love.

---

### ESSENTIAL THROMBOCYTOPENIC PURPURA

AMBROSE J. HERTZOG, M.D., Ph.D.

Minneapo'is, Minnesota

THE history of purpura goes back to the beginning of medical knowledge as Hippocrates in 400 B.C. was accredited as describing purpura associated with pestilential fevers. It is convenient to divide our knowledge of the hemorrhagic diseases into three phases. The first can be described as the important clinical contributions to our knowledge of the disease. In 1734, Hornung<sup>7</sup> divided purpura into the simplex, febrile, and scorbutic types. Werlhof<sup>19</sup>, in 1735, described "morbus maculosus hemorrhagicus" as a separate entity. Schonlein<sup>16</sup>, in 1829, described purpura with joint involvement. Henoch<sup>6</sup>, in 1868, described purpura with gastro-intestinal symptoms. After these fundamental descriptions, further attempts to classify purpura on a purely clinical basis led to endless confusion.

The second phase consisted of contributions from the standpoint of hematology and surgery. In 1882, Bizzozero wrote his classical paper describing platelets and their role in the coagulation of the blood. Wright<sup>21</sup>, in 1906, proved that platelets arose from the megakaryocytes of the bone marrow. Duke<sup>5</sup>, in 1912, showed the importance of the determination of the bleeding time and its interrelationship with the platelet count and clot retraction. Kaznelson<sup>8</sup>, in 1916, demonstrated the beneficial effects of splenectomy in essential thrombocytopenic purpura. The third phase is the present one, in which we are recognizing more and more etiological factors and attempting to advance our knowledge as regards the underlying pathological physiology involved.

### Classification

There is really no satisfactory classification of the purpuras. We can only classify them into two groups: idiopathic and secondary (Table I). It should be stressed that we can have a thrombocytopenia with many of the secondary purpuras. In general, any purpura with a platelet reduction is a more serious condition than one without a thrombocytopenia.

TABLE I. CLASSIFICATION OF PURPURA

- A. Essential thrombocytopenic (Werlhof)
- B. Secondary—with or without thrombocytopenia
  - 1. Blood dyscrasias
  - 2. Toxic
  - 3. Infections
  - 4. Vitamin deficiencies
  - 5. Allergy
  - 6. Splenomegaly
  - 7. Hereditary

In aplastic anemia and leukemia, purpura is common. It may be the first sign of leukemia. The hemorrhagic tendency in leukemia cannot be entirely placed on the basis of thrombocytopenia as purpura may be present in chronic myelogenous leukemia with an elevated platelet count. Hence we must in addition have a capillary factor. Many drugs, such as arsenicals, coal tar products, gold salts, benzol compounds, sulfonamides, and others can cause purpura. Purpura is not uncommon in uremia. Infectious diseases such as typhoid, small pox, meningococcic septicemia, and subacute bacterial endocarditis may show purpuric manifestations. Massive hemorrhage may occur in the adrenal glands in meningococcic septicemia and occasionally in other bacteremias. This is the so-called Waterhouse-Fredericksen syndrome. Vitamin C deficiency can cause bleeding of the gums

From St. Barnabas Hospital and the Department of Pathology of the University of Minnesota Medical School.

as seen in scurvy. Vitamin C appears essential as an intercellular cement substance. Szent-Gyorgyi<sup>1</sup>, in 1936, isolated from red pepper and later lemon juice a substance other than ascorbic acid that appears to be related to capillary permeability. He called it vitamin P. Under the term, allergic or anaphylactoid purpuras, is a group of nonthrombocytopenic purpuras apparently on the basis of capillary insufficiency associated with one or more of the common manifestations of allergy such as erythema, urticaria, or effusions into subcutaneous tissues and the intestinal tract. They include Henoch's purpura with gastro-intestinal disturbances and Schonlein's purpura with joint involvement. Purpura due to hypersensitivity to cold has been described by Peters and Horton.<sup>13</sup> We may later learn that food sensitiveness is responsible for some types of purpura. Some authors such as Wiseman<sup>20</sup> would exclude any case as essential purpura in which the spleen shows any appreciable enlargement. There is one type of non-thrombocytopenic purpura that occurs in both sexes and shows a familial tendency. This is the so-called pseudohemophilia described by v. Willebrand in 1926.

### Material

In the files of the pathology department of the University of Minnesota are the records of over 40,000 autopsies. There were ninety-nine cases listed as purpura. In reviewing these cases, one finds that the greater majority of them are examples of secondary purpura following such diseases as leukemia, meningococcic sepsis, bacterial endocarditis, scarlet fever, measles, et cetera. Some of them are examples of drug idiosyncrasies. After eliminating these cases, there remained thirty-six cases that belonged to the essential or idiopathic group. These occurred in otherwise normal individuals with no apparent cause. As the name implies, all showed a marked reduction in the platelet level. The average age of this group was 30.5 years and females predominated twenty-four to twelve males. This confirms the finding in the literature that essential thrombocytopenic purpura is a disease primarily of young people and that females show a marked preponderance. It is possible that the increased capillary permeability that precedes menstruation and the physiological decrease in the number of platelets during menstruation may be a predis-

posing factor in the development of purpura in females when associated with other causative factors that decrease the platelet level.

### Laboratory Findings

The essential laboratory findings in these cases are a prolonged bleeding time, a normal coagulation time, and a reduced platelet count. There is a paradox between the normal coagulation time and the prolonged bleeding time. This is due to the fact that only a few platelets are necessary to cause the blood to clot in vitro but the clot in the body is a defective one. Purpura can be easily separated from hemophilia by these simple tests as hemophilia has a normal platelet count, a normal bleeding time, and a prolonged coagulation time. In addition, every case of purpura should have a complete blood study with careful examination of the smear for immaturity of the leukocytes and platelet distribution. Direct platelet counts are notoriously inaccurate. They should always be checked by observing the distribution of the platelets in the blood smear. Another useful laboratory procedure that closely parallels the number of the platelets is a study of the character and reactivity of the blood clot when placed in a test tube. Two or three cubic centimeters of blood are placed in a test tube, incubated at 37° C. and observed at hourly intervals. Under normal conditions, the coagulum begins to retract within a few minutes and is usually complete in one or two hours after it is formed. In thrombocytopenic purpura, the clot is soft and fails to contract properly. A simple procedure for testing capillary permeability is the Rumpel-Leede cuff test. A blood pressure cuff is placed around the arm and the pressure is elevated half way between the diastolic and systolic pressure. This pressure is maintained from five to ten minutes. Where there is increased capillary permeability, multiple small petechiae will appear on the arm below the cuff. A bone marrow aspiration should be a routine procedure.

### Autopsy Findings

The findings at autopsy in a case of essential thrombocytopenic purpura apart from the hemorrhages is rather disappointing. The body may have the anemic appearance that follows profuse or prolonged hemorrhage. The degree of anemia may be very severe. In twelve of the thirty-six cases, death occurred from intracranial hemor-

rhage. This is one of the dreaded complications of acute purpura as it can cause death within a very short time. At times, the hemorrhages were so widespread that it was difficult to consider any part of the body as the principal site

before fixation would be a distinct aid in this direction.

Bone marrow material was available for study in only eight of the thirty-six cases. Five of these showed a marked increase in the number of megakaryocytes. Every high power field contained several adult megakaryocytes. Many immature forms of megakaryocytes were present. Apart from changes in the number of megakaryocytes, the myeloid and erythroid elements showed nothing besides a mild compensatory hyperplasia as a result of the loss of blood and the multiple hemorrhages. The remaining three cases were bone marrows from cases dying of persistent purpura following splenectomies. All three of these bone marrows showed a marked decrease in the normal number of megakaryocytes. We are beginning to realize that the best results following splenectomy are in those cases where the megakaryocytes are abundant (Fig. 1). Likewise poor results are to be expected from a splenectomy in a case where megakaryocytes are absent or markedly decreased in number. This is very logical as the platelet count cannot be expected to show a marked improvement following splenectomy if the mother cells are absent in the bone marrow.



Fig. 1. Megakaryocyte in bone marrow in thrombocytopenic purpura. Poor results are to be expected following a splenectomy if these cells are absent or diminished in number.

of the bleeding. There were twelve such cases. Nine continued to bleed after splenectomies and are classified as postoperative deaths. In two cases bleeding from the gastro-intestinal tract predominated and in one case the principal bleeding was from the genito-urinary tract.

Apart from the hemorrhages and anemia, little else is found. The pathologist has naturally centered his attention on the spleen and in more recent years in addition to the bone marrow. The average weight of the spleen in twenty individuals over twenty years of age was 232 grams. The largest weighed 365 grams and the smallest, 103 grams. The normal spleen in an adult weighs approximately 150 grams. Hence the spleen in essential thrombocytopenic purpura is only slightly enlarged and rarely palpable. Histologically, the spleens showed only slight departure from normal. The Malpighian corpuscles were usually prominent. This is a normal finding in a young individual. The sinuses of the pulp frequently contained a few scattered neutrophiles and eosinophiles in addition to collections of red blood cells. Megakaryocytes were occasionally found. It is extremely difficult to study phagocytosis on the routine hematoxylin and eosin tissue sections. The study of smears from the splenic vein at time of operation or imprints from the spleen

### Pathogenesis

There are still many things that we do not know about the pathogenesis of thrombocytopenic purpura. Any theory to be acceptable must take into consideration that we have increased capillary permeability, a reduction in the number of platelets, a spleen that is apparently histologically normal, and a bone marrow that usually contains many megakaryocytes. It is extremely difficult to correlate all these fact in any one theory in the light of our present knowledge.

First consider the relationship between the number of platelets and the spleen. Kaznelson's idea was that the platelets were destroyed by the spleen and the removal of the spleen would restore the platelet count to normal. Rosenthal<sup>15</sup> reports conflicting results from smears made from the spleen immediately after removal as some have reported a scarcity of platelets while others report large numbers of platelets. Rosenthal interprets this as evidence of various mechanisms involved. Morrison and Lederer<sup>12</sup> blame the failure of splenectomies to cure certain cases of thrombocytopenic purpura on the presence of

accessory spleens. After they began to look for them, they found them in as high as 35 per cent of their autopsies. One individual of this series who did not improve following a splenectomy had an accessory spleen that weighed 12 grams. DeSancitis and Allen<sup>4</sup> think that the entire reticulo-endothelial system can assume a role in destroying platelets. They attribute the failure following certain splenectomies as due to other parts of the reticulo-endothelial system assuming the function of the spleen. Another line of thought is that the spleen exerts a specific platelet depressing factor that prevents the bone marrow from releasing the platelets. Troland and Lee<sup>17</sup>, in 1938, reported that they had prepared from spleens in cases of thrombocytopenic purpura an extract that when injected into rabbits caused marked reduction of the platelets and a great increase in the bleeding time. Extracts from control spleens failed to produce these results. Others have failed to confirm Troland's and Lee's results. Watson<sup>18</sup> points out that other substances when injected intravenously will lower the platelet count. Limarzi and Schleicher<sup>9</sup> because of the great number of megakaryocytes usually found in the bone marrow in thrombocytopenic purpura conclude that the lack of platelets in the peripheral blood is the result of a splenic depressing factor that interferes with the proper maturation of the megakaryocytes in the bone marrow. In considering any theory concerning the relationship of the bone marrow and spleen, we have to keep in mind that normally the spleen exerts a physiological inhibitory action upon the release of myeloid cells in the peripheral blood as shown by the leukocytosis and increased platelet count that follows the removal of the spleen in a normal individual.

The other factor that has to be considered in the pathogenesis of this disease is the relationship between the platelet count and the increased capillary permeability that exists in this condition. The platelets may fall to a relatively low level without the production of purpura. In pernicious anemia and aplastic anemia, we may have a relatively low platelet level without the appearance of purpura. Furthermore, the degree of bleeding in any case of thrombocytopenic purpura is not always directly related to the degree of thrombocytopenia. Bedson<sup>2,3</sup> by means of a blood platelet antiserum in animals was able to reduce the platelet level to 40,000 without producing any signs of pur-

pura. However, if he first injured the capillaries of these animals by using an anti-red cell serum, then subsequently reduced the platelet level with the antiplatelet serum, purpura resulted. This led Bedson to conclude that we had two independent factors; namely, a vascular defect and platelet reduction. Mackay<sup>11</sup> and Macfarlane<sup>10</sup> would almost dismiss the platelets as being secondary or a coincidental phenomenon and stress the inability of the capillaries to contract after injury as the primary defect in purpura. Macfarlane studied capillaries directly and observed that capillaries contract after injury but that in the hemorrhagic states associated with a prolonged bleeding time this contraction is absent. The platelet loss can be explained on a simple depletion in their efforts to close up the multiple capillary defects. Quick<sup>14</sup> believes that a continual overproduction of histamine is responsible for the capillary vasodilation and increased capillary permeability. The platelets remove the histamine and are depleted.

### Conclusion

The diagnosis of essential thrombocytopenic purpura is only made after a thorough history, physical, and hematological examination including a bone marrow study. In a series of thirty-six autopsies in this condition, the average age was 30.5 years and females predominated twenty-four to twelve. Apart from hemorrhages and anemia little is found at autopsy. The spleen is only slightly enlarged and rarely palpable. The average weight of the spleen in twenty cases above twenty years of age was 232 grams. Histologically we find little departure from normal. The bone marrow in the majority of cases shows large numbers of megakaryocytes. The presence or absence of megakaryocytes in the bone marrow is very important from the standpoint of prognosis following a splenectomy. We are still ignorant as regards the exact relationship of the spleen and platelets in this condition and also as regards the relationship between the capillary permeability and platelet level. We know that we can have pure capillary purpuras without any platelet reduction and that any purpura associated with a thrombocytopenia is a more severe one. The platelets act as a protecting factor and control over the severity of the purpura. The question naturally arises as to whether we are dealing with a definite disease entity in essential

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purpura or only a syndrome due to a wide variety of still unrecognized etiological factors related to hypersensitivity to various chemicals, hormones, foods, et cetera.

### Bibliography

1. Armentan, L., Bentsath, A., Beres, T., Rusnyak, St., and Szent-Gyorgyi, A.: Über den Einfluss von Substanzen der Flavongruppe auf die Permeabilität der Kapillaren. Vitamin P. *Deutsch. med. Wehnschr.*, 62:1325, 1936.
2. Bedson, S. P.: Blood platelet antiserum; its specificity and role in the experimental production of purpura. *J. Path. & Bact.*, 25:94, 1922.
3. Bedson, S. P.: Further observations on platelet genesis. *J. Path. & Bact.*, 28:101, 1925.
4. Desanctis, A. G., and Allen, A. W.: Purpura haemorrhagica thrombocytopenia. *Am. J. Dis. Child.*, 41:552, 1931.
5. Duke, W. W.: The pathogenesis of purpura hemorrhagica with special reference to the part played by the blood platelets. *Arch. Int. Med.*, 10:445, 1912.
6. Henoch, E.: Quoted by Quick.<sup>14</sup>
7. Horning, A. L. F.: De purpura sive febre miliarie. Jena, 1734. Quoted by Quick.<sup>14</sup>
8. Kaznelson, P.: Verschwinden der hamorrhagischen Diathese bei einem Falle von essentieller Thrombopenie (Frank) nach Milzextirpation. *Splenogene thrombolytische Purpura*. Wien. klin. Wehnschr., 29:1451, 1916.
9. Limarzi, L. R., and Schleicher, E. M.: The reaction of peripheral blood and bone marrow in chronic hemorrhage and in essential thrombocytopenic purpura. *J.A.M.A.*, 114:12, 1940.
10. Macfarlane, R. G.: The mechanisms of hemostasis. *Quart. J. Med.*, 10:1, 1941.
11. Mackay, W.: The blood platelet; its clinical significance. *Quart. J. Med.*, 24:285, 1930-1931.
12. Morrison, M., Lederer, M., and Fradkin, W. Z.: Accessory spleens. Their significance in thrombocytopenic purpura. *Am. J. M. Sc.*, 176:672, 1928.
13. Peters, G. A., and Horton, B. T.: Allergic purpura with special reference to hypersensitivity to cold. *Proc. Staff Meet. Mayo Clin.*, 6:631, 1941.
14. Quick, A. J.: *The Hemorrhagic Diseases*. Springfield, Ill.: Charles C. Thomas, 1942.
15. Rosenthal, N.: Hemorrhagic Disease. In Downey, H., *Handbook of Hematology*, I, pp. 499-551. New York: Paul Hoeber, 1938.
16. Schonlein, J. L.: Quoted by Quick.<sup>14</sup>
17. Troland, C. E., and Lee, F. C.: Thrombocytopen; substance in extract from spleen of patients with idiopathic thrombocytopenic purpura that reduces number of blood platelets. *J.A.M.A.*, 111:221, 1938.
18. Watson, G. M.: The blood platelet, its clinical significance. *Quart. J. Med.*, 24:285, 1930-1931.
19. Werlhof, P. G.: *Opera medica*. 1775. Quoted by Quick.<sup>14</sup>
20. Wiseman, B. K., Doan, C. A., and Wilson, S. J.: The present status of thrombocytopenic purpura. *J.A.M.A.*, 115:8, 1940.
21. Wright, J. H.: The origin and nature of the blood platelets, Boston M. & S. J., 154:643, 1906.

## THE PSYCHOSOMATIC APPROACH TO CERTAIN DERMATOSES

WALTER A. CARLEY, M.D.

Saint Paul, Minnesota

### The Theory

IN his "History of Medicine" Garrison<sup>3</sup> states that the fundamental error of medieval medical science was in the divorce of medicine from surgery. He might have added that the fundamental error of modern medical science has been in the divorce of both medicine and surgery from psychiatry. The desire for a more adequate understanding of human ailments has lead investigators during the past few years to attempt to solve these problems with a somewhat new approach. That many physical illnesses have had an important psychogenic causal component has been recognized by students of medicine for many years. The lack of progress in further investigation was in a large part due to the dogma of nonscientific thinking that popularized the dualistic philosophy which has up to recent years impeded man's understanding of himself and his ailments. The newer approach does not allow for the consideration of a human being as being divided into organic and functional entities but rather that he should be considered as a complete unit reacting to his environment whether in a satisfactory or in an inadequate manner. The use of this method of

studying the individual and her complaints was used in the case to be presented.

I should like to point out briefly some of the most important factors in studying a case from this point of view.

1. The most essential is the establishment of a satisfactory emotional relationship between the patient and the doctor. Around this relationship revolves the entire understanding and success of the treatment of the patient. By its use, the physician can direct the patient's thoughts and emotional energies toward a more satisfactory method of adjustment. The establishment of this desirable emotional rapport can be enhanced by the referring physician who prepares the patient for the type of treatment which the psychiatrist may be able to give and the patient may expect to receive. An explanation by the referring doctor of his belief that the patient has no physical basis for her trouble along with a further explanation that emotional factors may be responsible for the patient's symptoms usually aids in the success of the patient's acceptance of psychiatric help. An added note that response to this type of treatment cannot be expected as readily as in many other forms of medical ther-

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apy will help her to not become impatient about the rate of her progress.

2. The patient must be indirectly led by the psychiatrist to consider herself as an individual and not as a symptom. In other words she must be taught that she and all her general reactions are much more important to her than any one or two isolated symptoms to which she has attached so much significance. As an example the patient's present complaint and focus of attention may be a generalized itching with resulting scratching. Yet with training and experience the doctor can direct her interest away from the itching and onto the all-important inter-personal relationships and experiences of her past and present life.

3. Through this direction she will be able to establish insight into her own inadequate behavior and with psychiatric help be able to redirect her energies in a more desirable manner.

### The Method

The case is that of a woman whose symptoms bothered mostly herself but indirectly those with whom she was closely associated. This case is used to show how and why the individual has her symptoms as well as the manner in which they may be corrected. The general technique follows that which has been described by Dr. Felix Deutsch<sup>1</sup> in his "Associated Anamnesis." By this technique the psychiatrist attempts to introduce into the interview between the patient and himself the least possible outside material or thought. Further he attempts to direct the patient's stream of thought and conversation along lines most likely to be important in her gaining insight into the development of her inadequate present manner of adjustment, in this case primarily the itching with the resulting scratching and skin manifestations. The specific technique follows that as taught by Dr. John C. Whitehorn.<sup>2</sup> It attempts to study the individual's personality by evaluating the patient's inter-personal relationships as experienced during her lifetime.

### The Case

The diagnosis of dermatitis artefacta of the case to be presented was made by Dr. Francis Lynch of Saint Paul. The patient was a married woman, forty-nine years of age, whose occupation was that of a house-wife along with that of aiding her husband in his busi-

ness of retail furniture sales and funeral arrangements. She was Catholic and had completed two years at a local teachers college.

The first interview was in August, 1943, at which time she complained of intermittent generalized severe itching that necessitated an intense scratching of different parts of her body. Associated with this, especially at night, was a marked desire to urinate. These symptoms had been present for the previous four years and had led her to seek aid from local doctors as well as from the two large Minnesota medical centers. She had had many types of treatment including hormonal injections, calcium, varied sedatives and local topical applications to her skin in an effort to alleviate her symptoms. She told of feelings of depression which were always increased during spells when her itching was intense. Further, her usual interest in life had disappeared and at times she had been quite lethargic.

As presented and at this stage of progress, the seemingly important points are those given by the patient in the "present complaint" and it is at this stage where the doctor frequently makes his mistake. If nothing but the symptoms are discussed or treated very little is accomplished. If, on the other hand, an effort is made to find out why and to what the patient is reacting in this undesirable manner the chance for success in treatment is greatly increased.

During the first interview she readily displayed her skin manifestations which consisted of a general thickening and paleness along with several areas where the superficial skin had been excoriated due to intense scratching. She spoke quietly but showed underlying anxiety in her tenseness and in her desire to tell everything possible about herself. She was moderately depressed and as she explained felt these feelings of depression were a result of her present symptoms.

Over a period of several months and in several interviews, the following material was brought forth. She was the youngest of six children, being seven years younger than her next oldest sibling, a brother. Since her childhood she had always felt that her parents had considered her an unwelcome mistake as they had had no desire for further children at the rather late period in their productive life. Yet her parents had given her everything possible in a material way. Even as a child she had learned to be demanding and she had been able to dictate to her environment as she desired. On one occasion while studying religion with a group of children of her own age the priest unknowingly embarrassed her before the others. She immediately rejected further religious training and interest and from then on refused to return to church. Her parents did not force her to do so. Through her entire life she had been ambitious, determined, and well able to cope with almost any situation that it was necessary for her to face.

As a child, she felt very much alone saying, "I always seemed to be with older people." As a girl of twenty, her main job seemed to be "to fit in where my chief problem in life seemed to be taking care of older people." In school she did well in those subjects

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in which she was interested. In adult life she became very interested in social activities, going to great effort to make any activity with which she was associated a success.

She characterized her father as being submissive and quiet and easily handled by her mother except when drinking, at which time he became quite a problem. As a result she never used alcoholic beverages because she had taken "the pledge" as a child at her mother's request. Her mother was the dominant factor in the household, frequently assuming the martyr attitude and always having trouble getting along with the patient's oldest sister. During recent years her mother had become a problem in that she continued to be one of the "older people" with whom the patient always had to live as a growing child and accept as an adult. One brother was a heavy drinker and had died of tuberculosis. She felt nothing but pity and disgust for him for being such a weakling.

Her husband was a rather quiet, easy-going man who did not seem to vary greatly in his mood reactions. By trade he was a mortician and it was with this work that she helped him, particularly in the care of the hair and face of the cadavers. One thing to which she did object was the interviewing of mourners. This seemed similar to her putting up with the general complaints of her elderly relatives.

Sexually, she had had her troubles. As a child she learned little in this line from her parents as that sort of conversation was tabu. At the age of five she was told by two nieces that she had been born of her mother. This was quite revolting to her and it was not until she was about twelve that she read a doctor book and was able to accept this fact. When she became pregnant, her father reprimanded her for her laxity in talking of her being pregnant. Her first menstrual period was not a total surprise as other girls had spoken to her of this phenomenon.

As a married woman, she had enjoyed sexual relations, not immediately, but after a year or two of married life. With her recent symptoms she had noted that she had a marked craving for her husband to run a stiff brush down the middle of her back while she lay prone on the bed. The sensation resulting from this stimulation was very similar to the orgasm of sexual intercourse.

Her only child was born during a period of economic stress, late in 1929. She and her husband had not anticipated his arrival which added to their problems. She was "invalided" for one year following his birth. As a nursing baby, he suffered from "mucous colitis." He had to be kept on a diet and it was not until he was ten years of age that his gastro-intestinal symptoms subsided.

As the boy grew she found increasing difficulty in controlling his activities according to her wishes. The boy tended to rebel and conflict was frequently expressed.

During the period of psychiatric treatment the patient talked to her husband regarding the interviews and it was at this time that he was first able to say that she was not courteous to their son and never had

been so. The son expressed similar feelings when he said to his mother, "You didn't want a son. You wanted an angel or a servant." Her frustration continued as the boy became interested in reading and other solitary activities while his mother wanted him to join in with the interests of the other boys of his own age, such as football, basketball, et cetera. The more she prodded him the more he rebelled.

The onset of the present illness is closely associated with the patient's attempt to dictate to her son. When he was ten years of age, and in about August of 1939, she was told by an eye specialist that her son would become progressively blind. Further, she believed that the less he used his eyes, especially to read, the longer his vision would last. She implored her son to reduce his reading to a minimum but as usual he rebelled. In October, 1939, she became aware that her efforts were in vain and it was at that time that she began suffering from her itching which gradually became more intense. This itching along with feelings of depression persisted during the intervening four years.

During the interviews, interpretations of various thoughts, feelings and behavior were made. The patient gradually gained insight into her reactions. To aid in her readjustment many situations and problems were discussed. As a result she decided to leave as much as possible of the disciplining of their son to her husband. It was pointed out that the less she directly demanded of the boy the more he would be willing to co-operate. This turned out to be true. Further, resocialization was encouraged, such as church, club and other group activities.

Because of the distance which the patient had to travel and of her limited financial resources she was interviewed at rather lengthy intervals for a seven-month period. Her response was gradual and encouraging. It might well be pointed out here that to have attempted to reduce the patient's anxiety by unfounded optimism during her treatment would have been to invite disaster.

In a letter which I received six months after the last interview the patient stated that her skin trouble had disappeared but more important she, her son and her husband had spent the most happy six months of their family life. Her son had become more interested in outside activities and hence used his eyes to read less. To the amazement of the patient and without any suggestion from her, he had become interested in football and basketball. She was now enjoying group activities in her town and her husband was more at ease about the congeniality of the family in general.

She had learned that her ability to adjust herself to her everyday problems was much more important than her skin condition and that the latter had cleared up as she became better able to make more adequate inter-personal adjustments.

### Psychiatric Formulation of the Case

In formulating this case, then, we see a woman who because of her early rejection by her parents learned to react to her environment in an

aggressive manner. Her parents were emotionally immature and from them she learned similar inadequate methods of handling her problems. As long as her aggressiveness met with success she remained fairly well adjusted, but when her aggressiveness failed to gain satisfaction she reacted in a more inadequate manner as expressed in her symptoms of severe itching necessitating the personal discomfort of resulting skin lesions along with the undesirable feelings of depression.

### Summary

In conclusion, the case was presented with the hope of showing the error in thinking of human ailments as being either functional or organic.

An attempt was made to understand the human being who was reacting in an undesirable manner, one of the essential features being her skin condition. With this understanding and aid in redirecting her emotional drives the patient made a more satisfactory type of adjustment to her environment. Her symptoms disappeared, not by treating the symptom itself as formerly had been attempted, but by treating the individual as a whole.

### Bibliography

1. Deutsch, Felix: Associated anamnesis. Psychoanalyt. Quart., 8:354-381, (July) 1939.
2. Whitehorn, John C.: Guide to interviewing and clinical personality study. Arch. Neurology & Psychiat. 52:197-217, (Sept.) 1944.
3. Weiss, Edward and English, O. F.: Psychosomatic Medicine. Philadelphia: W. B. Saunders Co., 1943.

## ADMINISTRATION OF PENICILLIN BY THE KNEE JOINT METHOD

WILLIAM R. BAGLEY, M.D., F.A.C.S.

Duluth, Minnesota

ARTICLES by Rummelkamp and associates and their findings relative to the rapidity with which penicillin appeared in the various tissues and body cavities and the period of time during which these tissues and cavities supplied the administered penicillin to the blood and body as a whole and was eliminated by the kidneys, caused the writer to institute a practice of administration of penicillin which up to the present time has been very satisfactory from the standpoint of the patient, as to discomfort and inconvenience, and the results obtained. I have seen no reference advocating knee joint administration of penicillin for conditions outside the knee joint.

We chose the knee joint because of its size, accessibility and the expectation of delayed dialyzing through a synovial membrane giving prolonged administration of this drug which is excreted so rapidly by all usual methods of administration.

We used the knee joint first in a case of multiple arthritis. Of the number of affected joints one knee was not involved and 100,000 units were injected into it as a preventative measure. No discomfort resulted so that we would aspirate and inject the affected knee one day and inject the well one the next, using 100,000 units in 10 c.c. of sterile water as the regular dosage.

The smaller volume of 10 c.c. did not give the distention pain.

We have used this method at this writing over eighty times, in a few instances using both knees, one in the morning, the other at night, for several days and 80 per cent of the doses have been 100,000 units in 10 c.c. of sterile water.

Some patients have had a little discomfort for five or ten minutes immediately following injection. With the use of 2 c.c. of 1 per cent novocaine in the joint several minutes preceding the penicillin injection patients have no discomfort.

Our patients have varied in age from fifteen to seventy-nine years.

The following types of cases have been treated: arthritis, pneumonia, gangrenous gall bladder and postoperative infected abdominal wall, strangulated hernia with resection of gut and gas gangrene, septic sore throat and beginning arthritis in one knee, gonorrhea.

All these patients made splendid recoveries, except those with arthritis, who improved.

We have treated, experimentally, two patients with syphilis. One has received twenty-six and the other nineteen knee joint injections of 100,000 units each in 10 c.c. of sterile water. They come to the office, get their injections and walk out.

One of these patients who also has tabes has had three spinal injections, two of 100,000 units

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each and one of 150,000 units besides his twenty-six knee injections. The drugs were dissolved in 10 c.c. of sterile water but well mixed with the spinal fluid before injection. No discomfort followed. The second, who received nineteen knee joint injections, had varicose ulcers of the sluggish gray necrotic luetic tissue type which granulated in under this treatment. He also was given 100,000 units of penicillin in 10 c.c. of water in the spinal canal when we aspirated for a State test. Spinal fluid was negative in this case. Both of these patients were old neglected cases and "didn't know they had it." The final results may be interesting.

The method we use is to dissolve the penicillin in 10 c.c. of sterile water, using a No. 16 needle to perforate the stopper and aspirate the solution. With a 23 caliber 1.5 inch needle we inject 2 c.c. of novocaine into the knee joint hugging the patella near the tendon insertion. After massaging of the knee contents for several minutes with the needle in place, the 10 c.c. of penicillin is injected through this needle and an ice bag is placed on the knee for the next eight or ten hours. The sodium preparation made by four different companies was used. The lighter colored brands seem a trifle less irritating.

Using larger doses in small amounts of sterile water in the knee joint seems desirable because a greater blood concentration over a longer period of time is obtained and the volume being small does not cause discomfort from distention. The solution of 10,000 units per 1

c.c. of sterile water seems to be relatively non-irritating to synovial membrane.

One may hesitate to use this method, arguing, the danger of joint infection, damage, etc., but the gravity of the case might justify taking such a risk which is very minimal if surgical precautions are used. I must judge from my own experience. I expect allergic individuals will be found, but the lack of toxicity otherwise (no liver, heart or kidney damage in contrast to the sulfa group), warrants its use first rather than last. The knee joint seems to be a desirable route for administration, causes no more discomfort than giving a hypodermic and produces a more prolonged action than an intramuscular injection.

I wish to acknowledge laboratory help and advice from Miss Mary Pollock, technician, and Dr. Arthur H. Wells of St. Luke's Hospital in coming to the conclusions outlined above.

\* \* \*

Since writing this article, we have had apportioned to one of our hospitals some deep orange-colored, 100,000 Unit Penicillin of considerable bulk. This penicillin given intramuscularly is painful and in the knee joint very painful and causes marked swelling. This reaction is very evidently due to foreign matter in the preparation and should call for better controlled laboratory methods in its manufacture. Its presence also may harm parenchymatous organs which have been immune to injury from the purer penicillin which is nearly white. The light lemon-colored Penicillin has given very little discomfort and it would seem the lack of irritation is an index of purity.

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## DISEASE IN CHINA

In China disease is much more prevalent than it is here. Cholera is reported every year; there were 100,000 cases in 1932, 65,000 cases in 1942, 17,000 cases in 1943. Bubonic plague had approximately 6,000 cases in 1942. It is estimated that there are about 6,000,000 cases of dysentery annually, 90 per cent bacillary, 10 per cent amebic. The estimated number of cases per annum of typhoid fever is 700,000; of smallpox, 500,000;

of diphtheria, 360,000; of scarlet fever, 180,000. Epidemic meningitis is estimated at 100,000 cases per annum; malaria, 21,000,000 cases per annum; schistosomiasis, 10,000,000 cases per annum. Active tuberculosis is estimated at 36,000,000 cases, 8 per cent of the population. Under-nutrition is so widespread that no figures of any kind are available.—RAYMOND B. FOSDICK, L.L.D., *Am. J. Pub. Health*, (Nov.) 1944.

# PEDIATRIC-PATHOLOGICAL CONFERENCE

DULUTH PEDIATRIC SOCIETY  
O. W. Rowe, President

ST. LUKE'S HOSPITAL  
Arthur H. Wells, Pathologist

## Case Presentation

DR. A. H. WELLS: A seven-month-old infant was presented before this group two months ago with a huge palpable mass in the right side of the abdomen. After the clinical history and individual physical examinations of the child the nine pediatricians present agreed on a diagnosis of a neoplastic process in the abdomen. Among the lesions mentioned for differential diagnoses were: Wilms' tumor, neurocytoma, fibroma or fibrosarcoma, carcinoma, lipoma, leiomyoma and enterogenous cyst. Three of the pediatricians voted for immediate laparotomy and six were in favor of continuing palliative treatment with x-rays. Dr. Sincock, would you mind briefly reviewing the history for us.

DR. H. A. SINCOCK: This infant was five weeks premature from the expectant date at the time of his normal delivery. He weighed 7 pounds 14 ounces and is said to have been a healthy, well developed baby. He was breast fed for three months during which time he apparently had no trouble whatever. However, when attempts were made to feed the infant foods other than milk he suffered from loose stools and intermittent vomiting. No food could be found other than milk which agreed with him. He was brought to me at six and one-half months of age. Physical examination revealed a rather emaciated baby for his age. The cranium was normally shaped and the fontanelles flat. No abnormalities could be found in the head, chest or throat. There was however, a very distended abdomen in which one could palpate a large, firm, tumor mass which extended from under the costal margin on the right side down to the anus. In fact a finger could not be put into the anus because of the blocking mass immediately inside of the anal sphincter. At that time an x-ray examination revealed the large tumor mass in the right side of the abdomen and the roentgenologist suspected Wilms' tumor of the right kidney. A few days later intravenous diotраст and roentgenograms of the kidneys revealed an inconclusive filling in the right pelvis and ureter. There was some suggestion of evidence that the right kidney may have been normal with some superimposed mass in the kidney region.

The clinical diagnosis at that time was neuroblastoma or Wilms' tumor. X-ray therapy resulted in an appreciable decrease in size of the tumor and the mass which continued to distend the entire right side of the abdomen, felt somewhat softer than previously. Two months before the child's death he was demonstrated before this group of eminent pediatricians of the Northwest and there was almost unanimous agreement on the diagnosis



Fig. 1. Congenital anal stenosis.

of a malignant tumor in the abdomen. In fact, as already stated six of the nine pediatricians felt that palliative x-ray therapy was indicated.

I advised the mother to take the child to a pediatric surgeon out of town, however, she took him to a Christian Scientist practitioner, and I did not see him again until he died, two months later. A clear cut history of his terminal progress was not obtainable. It appears that he had been suffering from obstipation and vomiting shortly before death.

DR. A. H. WELLS: The subject is now open for questions or diagnoses.

DR. R. E. NUTTING: Was there a barium enema study?

## PEDIATRIC-PATHOLOGICAL CONFERENCE

DR. H. A. SINCOCK: No.

PHYSICIANS: "Neurocytoma." "Wilms' tumor." "Malignancy in the intestines causing obstruction."

### Autopsy

DR. A. H. WELLS: Briefly, the only significant necropsy findings were those of stenosis of the anus, emaciation and obvious intestinal obstruction due to the stenosis and a fecal impaction. There was a huge dilatation of the rectum, sigmoid and descending colon with a massive hard fecalith filling these structures. A pencil could be forced through the anus with some difficulty. The anus, sigmoid and descending colon formed one huge cavity (Fig. 1) measuring approximately 25 cm. long and 12 cm. in diameter. It was located primarily on the right side of the abdomen. There was a rather sudden cessation of the extreme dilatation at the upper end of the descending colon. The proximal portion of the colon was only mildly dilated up to 2 cm. in diameter. The walls of the remarkably dilated portion averaged 4 mm. in breadth and were unusually firm. Microscopic sections of these walls revealed a hypertrophy primarily of the circular muscularis. However, all structures were enlarged including the glands of Lieberkühn. Auerbach's and Meissner's plexuses were not unusual. There was no inflammatory change in the gut wall. The dried, hard, fecal matter filling the sac was laminated in some areas. It formed a cast of the pelvis and much of the lower abdomen and extended up under the costal margin on the right side. The remainder of the large and small intestines as well as the stomach were moderately distended with gas. There was very little food or fecal matter in them. The peritoneal surfaces had no injection or adhesions. There was only mild congestion of the lungs and no consolidation or purulent matter. The myocardium, liver, spleen and kidneys revealed mild toxic changes. It was concluded that the infant had died of intestinal obstruction as the result of congenital anal stenosis and a complicating huge fecal impaction.

### Discussion

DR. F. R. PETERSON: How does this condition vary from megacolon?

DR. A. H. WELLS: According to Wilensky<sup>4</sup> the "mega" syndromes are generally conceded to be the result of disorders in the autonomic nervous system. There is no organic obstruction. The end result may look much the same, with dilatation of the colon and hypertrophy of its walls. Included in the "mega" syndromes are megaesophagus, with cardiospasm, megastomach, megacolon, megaloureter, megalopelvis of the kidney, chronic dilatation of the urinary bladder and possibly certain cases of hydrocephalus. While conditions similar to stenosis of the anus would include esophageal stricture, pyloric stenosis, stricture of the colon, incomplete obstructions of the ureter, obstructing prostatic hypertrophy and congenital stenosis of the aqueduct of Sylvius with dilatation of the lateral ventricles. In all of these situations there is a necessarily prolonged balance between the degree of stenosis and the func-

tion of the proximal structures to result in severe grades of dilatations.

Ladd and Gross<sup>1</sup> made one of the more widely accepted classifications of types of anal and rectal congenital obstructive abnormalities. Their four types are of sufficient importance to list them here:

*Type 1.*—Incomplete rupture of anal membrane or stenosis at a point 1 to 4 cm. above the anus.

*Type 2.*—Imperforate anus. Obstruction due only to persistent membrane.

*Type 3.*—Imperforate anus, but with rectal pouch separated from anal membrane. Rectal pouch ended blindly either in pelvis or above pelvis.

*Type 4.*—Anus and pouch normal. Rectal pouch ended blindly. Either membranous obstruction, or separation of these two pouches. When pouches were separated, a cord of tissue (without a lumen) occasionally connected them.

In their collection of 162 cases collected during a twenty-five-year period from 121,515 patients entering the Boston Children's Hospital they found Type 3 to be twice as frequent as all of the other types combined. Any one of these four types (approximately 50 per cent of all cases) of anal or rectal abnormalities may be associated with fistulae. These may extend from the rectum to the urinary bladder, urethra, ureter, uterus, vagina or perineum.

The symptoms and signs<sup>2</sup> resulting from complete or practically complete obstruction by any one of the four types were those of absence of bowel movements, inability of parent or physician to find an anal opening, and after the first twenty-four to thirty-six hours of life, abdominal distension, vomiting and refusal to eat. In Type 1, where the stenosis was not too severe or in cases where the complicating fistulae were large enough for meconium and bowel movements to relieve the obstructing symptoms, the condition may not be diagnosed or suspected for as much as a year or more. In most instances a local examination will suffice for recognition of the various types of obstruction including the possible fistulae. Occasionally the latter may be quite small and patent only at intervals so that their detection may be accomplished only with difficulty. Wangensteen and Rice<sup>3</sup> devised a practical method of delineating the position of the blind end of the rectum by holding the infant with head down so that rectum will fill with gas. A flat x-ray plate of the abdomen and pelvis is then taken. After the first twenty-four hours of life this method is reliable. Injections of opaque material may be of added aid in a complete study of a given case.

Simple stenoses of the Type 1, can be cured by daily dilatation of the anus in the hospital and later the dilatation may be carried on at specified intervals by the parent for the ensuing four to six months. The other three types of rectal and anal obstructions require well-established surgical procedures which are generally successful if performed within the first three or four days

(Continued on Page 234)

# CLINICAL-PATHOLOGICAL CONFERENCE

MINNEAPOLIS GENERAL HOSPITAL

A. J. HERTZOG, M.D., Pathologist

## MESOTHELIOMA OF THE PLEURA

### Report of Case

DR. JAMES RILEY: This is the case of a sixty-year-old white male who entered the Minneapolis General Hospital in May, 1944, with the chief complaint of shortness of breath and pain in his left chest. He had been perfectly well until February, 1943, when he noticed the onset of shortness of breath and a feeling of compression in his left chest. He consulted a physician who diagnosed it as pneumonia and hospitalized him in a private hospital where he remained for one week. Ten days later his symptoms returned, and he was again admitted to the private hospital for a thoracentesis. Two thousand cubic centimeters of fluid was removed from the left pleural cavity. Between March and August, 1943, he was hospitalized eight times. On each occasion between 1,000 and 2,000 cubic centimeters of fluid was aspirated from his left chest. In August, 1943, he was sent to the Glen Lake Sanatorium with a tentative diagnosis of pulmonary tuberculosis. At Glen Lake the diagnosis of tuberculosis could not be established. He remained afebrile. The fluid continued to be aspirated from his chest. Bacteriological studies, including guinea pig inoculations from the fluid, were all negative. He was bronchoscopyed, with negative results. The pain in his chest would be made worse by the thoracentesis and would subside between aspirations. He had no cough or hemoptysis. On entrance to Minneapolis General Hospital in May, 1944, physical examination showed a fairly well preserved white male whose weight was 140 pounds. His blood pressure was 166/110, his pulse 80 and his temperature 99 degrees. Examination of the head and neck was negative. There was retraction of the whole left side of the chest. There was dullness and flatness over the entire left chest below the fourth rib. Breath sounds were decreased over this area. There were no râles. Examination of the right side of his chest was essentially normal except for hyper-resonance. The mediastinum appeared shifted to the right, as the heart border was 6.5 cm. to the right of the midline and only 3 cm. to the left. The abdomen was negative. There was no edema. Rectal and neurological examinations were negative. Hemoglobin was 82 per cent (Sahli), white blood count 7,600 with a normal differential count. Urinalysis was negative except for a trace of albumin. Sedimentation rate was 40 mm. (Westergren) for one hour. Plasma proteins were 6.5 grams per 100 c.c. with a normal albumin-globulin ratio. During his hospital stay, he had a thoracentesis twice a week. Each time from 300 to 600 c.c. of fluid was obtained. Sometimes the fluid was bloody. The thoracenteses proved to be painful and he always complained of a great deal of pain following them. The specific

gravity of the fluid varied from 1.012 to 1.013. The fluid showed from 0 to 3,900 red cells per cubic millimeter. On three occasions search for cancer cells was made in the fluid, with negative results. In May, 1944, he complained of pain in his epigastrium after meals. A gastro-intestinal x-ray study revealed a duodenal ulcer. He was placed on an ulcer regimen and his symptoms rapidly subsided. On September 9 a pericardial friction rub was noted and he developed edema of his ankles. He was digitalized but symptoms of heart failure persisted. A venous pressure was 30 mm. of water. The liver became palpable, the chest pain and dyspnea increased. Because the hemoglobin fell to 55 per cent (Sahli), he was given a blood transfusion. However, he became rapidly worse and expired on October 6, 1944. His entire illness lasted approximately 18 months. During his entire stay at Minneapolis General Hospital, except for the last two or three weeks, he was ambulatory and walked around the ward.

DR. HERTZOG: The problem we have is the nature of the lesion in his left chest that was responsible for the continual production of fluid in his left pleural cavity. The pericarditis and heart failure appeared to be a terminal event. We will see if Dr. Stenstrom can throw any light upon the subject.

DR. STENSTROM: Chest films show the heart displaced to the right by fluid in the left pleural cavity. The fluid obscures the diaphragm completely and makes a very dense shadow. The left lung appears collapsed, while the right lung appears normal. These later films show, in addition to the fluid level, a peculiar shadow evidently continuous with the pleura. The pleura is so thickened that the question of a tumor arises. Other films show, in addition to the thickening of the pleura, two fluid levels. I don't think one can be certain whether the thickened pleura represents an inflammatory process or a neoplastic one. However, the peculiar bulging of the posterior pleura suggests a neoplasm. This film of his stomach shows the characteristic deformity of the duodenal cap seen in a duodenal ulcer. In addition, there is an accessory pocket caused by the ulcer penetrating the muscular coat and serosa of the duodenum.

DR. HERTZOG: When you speak of tumors of the pleura, do you mean metastatic ones?

DR. STENSTROM: No, I have in mind a primary neoplasm of the pleura, such as an endothelioma or mesothelioma of the pleura.

## CLINICAL-PATHOLOGICAL CONFERENCE

DR. DENNIS: I am going to guess in favor of a primary malignancy of the pleura.

DR. HERTZOG: One has to remember that primary carcinomas of the lung can metastasize to the pleura and give a picture very similar to a mesothelioma of the pleura.

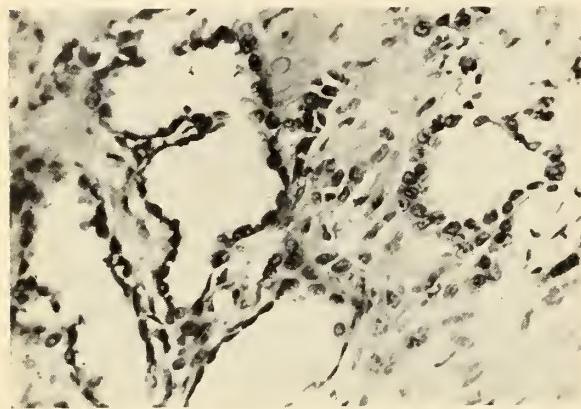


Fig. 1. Mesothelioma of pleura. Note cystic spaces lined by cuboidal cells.

DR. DENNIS: Do you think that the persistent bloody pleura fluid has any significance?

DR. HERTZOG: Malignancy will give a bloody fluid more often than an inflammatory process.

DR. BRENNER: You cannot use the presence or absence of blood in a thoracic or abdominal fluid as a point of differentiation, as I have seen an inflammatory process give a bloody fluid.

DR. DENNIS: If one would assume that this is an inflammatory process, what type of micro-organism would one expect to find?

DR. HERTZOG: Tuberculosis is the commonest cause of unexplained pleural effusions.

DR. BRENNER: Tuberculosis as a cause of pleurisy is not as common today as it used to be. I think practically every case of rheumatic fever would show evidence of pleurisy if examined carefully.

DR. STENSTROM: Nevertheless, you should rule out tuberculosis.

DR. HERTZOG: Repeated guinea pig inoculations were negative for tuberculosis. Dr. Riley will give the autopsy findings.

### Autopsy Findings

DR. RILEY: I will give only the essential findings. The right pleural cavity contained approximately 350 c.c. of straw-colored fluid, while the left contained 100 c.c. of similar fluid. The left parietal pleura was diffusely thickened, measuring 2 cm. in thickness. The left lung was completely collapsed and covered by thick, greyish-white fibrous tissue. This involved also the pericardial sac. The pericardial sac was thick, greyish-white and indurated. The sac was obliterated by a fresh hemorrhagic, fibrinous exudate. The right pleura cavity and right lung appeared normal except for three small tumor nodules adjacent to the pleural surface of the right lung. A careful search of the bronchi failed to show

any evidence of any neoplasm. The peritoneal cavity contained about 700 c.c. of straw-colored fluid. The liver was enlarged. It showed passive congestion and contained several discrete tumor nodules which measured from one to three centimeters in size. There was the scar of a healed duodenal ulcer. The remaining ab-

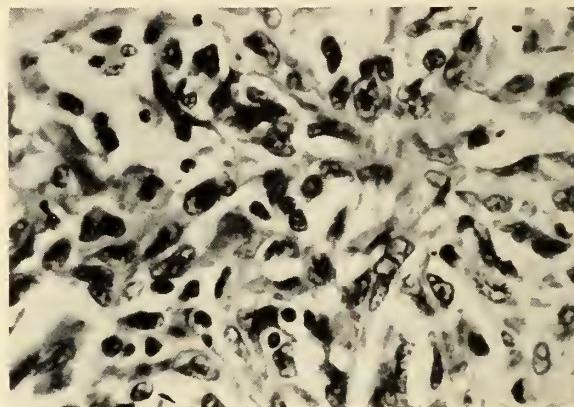


Fig. 2. Metastasis to liver. Note sarcomatous structure.

dominal viscera, including the genito-urinary tract, appeared normal.

DR. HERTZOG: At the time of autopsy, it was only when we found the tumor nodules in the liver that we could be certain that we were dealing with a neoplastic rather than an inflammatory process. I will show you the microscopic slides. You will notice from this section of the left pleura that one cannot immediately say what one is dealing with. It shows a great deal of collagenous fibrous tissue with collections of fat cells. Some areas contain small cystic spaces lined by discrete cuboidal cells that resemble epithelium (Fig. 1). Here is another area in which there are solid areas of similar cells that are beginning to have a sarcomatous appearance. We know now that this is not an inflammatory process. One is struck with the resemblance, histologically, to a synovial sarcoma or synovioma arising from the synovial membranes of large joints. These tumors likewise have epithelial-lined spaces that blend with a sarcomatous stroma. Note the pleomorphic appearance of the cells in this section of the parietal pericardium. The metastatic nodules in the right lung have the same picture as found in the left pleura. The right lung is completely atelectatic. The liver nodules have a distinct sarcomatous appearance (Fig. 2). The remaining liver shows severe passive congestion. The heart failure was on a mechanical basis due to the pericardial involvement.

Our diagnosis in this case is then a primary mesothelioma of the left pleura with involvement of the pericardium and metastasis to the right lung and liver. The diagnosis of primary mesothelioma of the pleura is based on a consideration of all the features in this case. One is naturally cautious about making such a diagnosis in view of the controversy in the literature. In favor of a primary pleura malignancy is the long clinical course with repeated left-sided pleural effusions

(Continued on Page 220)

# HISTORY OF MEDICINE IN MINNESOTA

## HISTORY OF MEDICINE IN GOODHUE COUNTY

(Continued from February issue)

About 1865 the drug stores began "putting on city style and delivering free of charge." In 1869 Charles Hill of Pine Island was elected to the state senate, and the Old Settlers Association was founded, with W. W. Sweney as permanent vice president. In 1869 the Goodhue County Medical Society was organized, as provided for by the constitution of the Minnesota State Medical Association, which had been reorganized and of which Drs. Sweney, Hawley and Hewitt were charter members.

The purpose of the Goodhue County Medical Society, as stated by those who called the first meeting, was "to secure by organization a more perfect harmony and sympathy among ourselves, to make the profession present a united front to the inroads of quackery and fraud, and also, to stimulate each member to more hearty and continual effort for professional elevation and success."<sup>4</sup> The following were the first officers of the organization:

President—W. W. Sweney, Red Wing  
Vice President—Charles Hill, Pine Island  
Recording Secretary—Salem Town, Red Wing  
Treasurer—A. H. Jones, Red Wing  
Censors—C. N. Hewitt, Red Wing  
E. S. Park, Red Wing  
O. H. Hall, Zumbrota

Other regular physicians who were charter members were: A. B. Hawley and F. F. Hoyt of Red Wing. Drs. Hill, Park, and Jones were elected delegates to the State Medical Association, and Drs. Hawley, Hewitt, and Hill were appointed members of a standing committee on intelligence. A committee<sup>5</sup> was appointed to draft a law legalizing state and county medical societies, to be presented, if accepted, to the State Medical Association, with a view to securing its enactment by the state legislature. The society also resolved to call the attention of the State Medical Association to the fact that there was no law providing compensation to physicians making postmortem examinations, in cases of legal investigation, or for giving testimony as medical experts in legal investigations where no postmortem is made. A uniform minimum fee table was also agreed upon at this meeting.

### 1870-1880

During the first years of its existence the medical society met semi-annually. In January, 1870, Christian Gronvold and Bruno Jaehnig were elected to membership. Both of these men stood high in their profession and held several public offices for long terms. Dr. Gronvold was one of the foremost authorities on leprosy. At this meeting, also, a petition was adopted asking Congress for legislation on the subject of the rank, pay, and authority of surgeons in the Navy. This petition

4. *Goodhue County Republican*, March 18, 1869.

5. Hewitt, Hoyt and Park.

## HISTORY OF MEDICINE IN MINNESOTA

asked justice for a body of men whose position was then a disgrace to the nation.

The second group of officers who served the society included William W. Sweney, president, E. S. Park, vice president, Bruno Jaehnig, permanent secretary, Christian Gronvold, assistant secretary, and A. H. Jones, treasurer.

Typhoid fever and scarlet fever occupied the stage in the seventies. In the summer of 1870, it was reported that O. H. Hall of Zumbrota had charge of two hundred cases of typhoid of which only two terminated fatally. It is apparent that this was either newspaper exaggeration or else that not all of the cases were diagnosed correctly. The disease was prevalent, nevertheless.

In 1871 eight leading regular physicians<sup>6</sup> of Goodhue submitted, by request, to the State Medical Association a list of the number of cases of various diseases that each had treated during the year. The list is probably incomplete; but it serves as an indication of local health. The total number of typhoid cases may be estimated from the reports as forty-four. They were said to be milder and rarer than usual. Of scarlatina there were about one hundred and forty-five cases; of dysentery, fifty-three; erysipelas, ten; diphtheria, five; rheumatism, six; rubeola, ten; spinal meningitis, one. In 1877 and 1879 there were minor epidemics of typhoid in the neighborhood of Kenyon. Scarlet fever again appeared in Red Wing in a mild form in January of 1872, and again in Goodhue Center in January, 1878. A considerable number of fever cases, probably dysentery, were reported in the fall of 1873 and continued through the winter months that followed. Pine Island and Zumbrota seem to have been the centers. About a year later both towns experienced slight epidemics of measles and "Black Hills" fever.

More attention, however, was being given to the duties and authority of town and county officers. Red Wing had a city physician elected each year, whose duty it was to keep track of such contagious diseases as were within the city and to do what he could to prevent them from spreading. The newspapers printed, from time to time, extracts from medical books concerning the prevalent epidemics.

In 1872, Charles N. Hewitt was elected permanent secretary of the state board of health, a position which he held until 1897. During these years he was especially active in the work of preventive medicine, and in Goodhue County, as well as throughout the state, he helped organize local boards of health, lectured on ventilation and sanitation, and inspected public buildings, schools, and water supplies. He advocated especially the teaching of hygiene and first aid in the public schools in place of teaching physiology. He suggested that suitable textbooks be prepared and that newspapers be used for health information. As time progressed the amount and variety of work done by the state board of health increased enormously. For the first ten years of Dr. Hewitt's service his salary was \$500 a year. During the last year he served as secretary his salary was raised to \$3,500.

Dr. Hewitt acquired a national reputation for his work in public health. He was an honorary member of the New York State Medical Society, of health societies in both France and England, and was elected president of the American Public Health Association. Geneva College, New York, conferred upon him an honorary degree in recognition of his service. His biography is given more fully in the biographical notes.

During the seventies a total of about fifty physicians came to Goodhue County. Some stayed but a short time and very little is known of them, particularly if they practiced in small communities. Some of the more important physicians who came during this period were: E. C. Bolander, George Leininger, William M. Sweney, a son of the pioneer doctor, J. H. Sandberg, and G. C. Wellner, of Red

6. Drs. Hall, Hill, Tibbets, Sweney, Jaehnig, Hoyt, Park, and Hewitt. The statistics are from the records of the State Medical Association for that year.

Wing; A. T. Conley, of Cannon Falls; A. K. Lindboe, and H. L. McKinstry, of Zumbrota; George H. Overholt, of Kenyon.

The first record of a woman physician in Goodhue county is the card of Mrs. C. A. Bennett, M.D., which appeared in a newspaper in 1876. According to this card she specialized in the diseases of women and children, gave free consultation from one to four o'clock every afternoon, and gave away free trial bottles of "Cough Cure and Renovator," a brand of her own making. A little later "Mrs. Dr. Goebel" came to Red Wing from Chicago where she claimed to have had an extensive practice. In Red Wing she was successful both as a physician and druggist, although she moved, after a few years, to Fargo, Dakota Territory, and later, to Moorhead, Minnesota.

### 1880-1890

During the eighties approximately thirty more physicians are recorded as practicing in Goodhue County. The physicians' directory for 1883-90 included a large number of names but omitted those who stayed only a year or so and then moved to other fields. The decline in the use of public advertisements which occurred about 1880 adds to the difficulty of compiling an accurate list of practitioners. A modern scholar may well agree with the editor of the *Advance* who wrote with some ire:

Every physician and professional man should have his card in the local paper of his city. There is nothing unprofessional or contrary to medical or any other kind of ethics in it. The newspapers should be a complete business directory each week to the professional man as well as to the mercantile interests of the city. The man who will not advertise in a paper that is devoted, on very small pay, to the building up of the manufacturing, business, educational, and social interests of the city ought to be considered out of business. If such a non-advertising course is generally pursued much longer, this city will soon be without papers.<sup>7</sup>

If physicians' notices were lacking, however, there was one unusual card, the first of its kind to be noted in Goodhue county. Mina L. Hauer announced that she had arrived in Red Wing with the intention of making it her permanent home, that she was a graduate of one of the best schools in the country, and that she would wait on ladies desiring the services of a midwife.

The more important physicians were J. V. Anderson, of Kenyon, H. E. Conley, of Cannon Falls, Glidden of Pine Island, Newhall and M. Magelssen, of Red Wing, and Hans J. E. Karen.

Dr. Eduard Boeckmann, while maintaining his practice in St. Paul, is said to have occupied offices in Red Wing, Zumbrota, and elsewhere for purposes of consultation. He often visited Dr. Gronvold also during those years. Both were interested in leprosy. Dr. Boeckmann had been in charge of a leper hospital in Norway before coming to this country, and Dr. Gronvold was the first physician to report a case of Norwegian Leprosy or Elephantiasis Graecorum in Minnesota.<sup>8</sup> In 1879 Dr. Gronvold, always generous with his hospitality, had as a guest Dr. Gerhard Armauer Hanson, from Norway, who was then in charge of a leper hospital there and who was the discoverer of the leprosy bacillus.

Beginning in 1881 the Goodhue County Medical Society began to meet quarterly instead of semi-annually. The membership was increased, amendments were made to the constitution, and the organization seemed to take a new lease on life. Methods of popular education in regard to health were considered; the desirability

7. *The Advance of Red Wing*, March, 1883.

8. This case was reported in 1870 to the Goodhue County Medical Society. Subsequently it was included under the title "Remarks on Norwegian Leprosy" in the report of the Minnesota Board of Health for 1873, pp. 70-74. "Leprosy in Minnesota," first published in *Public Health* (1886-7 II 89-91) is another article by Doctor Gronvold.

## HISTORY OF MEDICINE IN MINNESOTA

of new legislation in regard to medical testimony was considered and the need of change in laws relating to malpractice suits was stressed.

In 1883 the organization of local boards of health and a county hospital were discussed. The latter question provoked considerable interest. An editor who compared the conditions in Wabasha and Goodhue Counties pointed out that the former, with a county hospital, expended only about \$500 for medicines and attendance the preceding year, while Goodhue for the same length of time spent \$4,605.21 for its poor, one-half of which was for medical attendance and medicines. The difference was explained by the fact that in Goodhue county the poor who required attention could call on any physician they desired, at the regular fee. Medicines bought in small quantities cost more than if bought in large quantities, and the poor had to be boarded separately instead of in groups. A hospital was also needed for such cases as railroad mishaps in which a number of people might be hurt, as well as for cases of contagious diseases. The hotels and boarding houses were poor places to take anyone needing attention, and private families generally did not like to take the risk or responsibility.

The county hospital was finally founded in the fall of 1884. The city physicians of Red Wing consented to take care of the hospital for one year free of charge. Dr. Bruno Jaehnig was the first superintendent. The rest of the staff consisted of C. N. Hewitt, Geo. Leininger, and Mr. F. Seebach, who represented the county commissioners. The hospital was pleasantly situated, overlooking the river, and the rooms were free of dirt and dust. The steward and nurses lived in the same building. Patients were admitted who would otherwise be sent to the poorhouse or who lived at a distance and could be attended there at less expense to the county. The physician in attendance was not responsible for any previous treatment nor for treatment given by a private physician. Others than those depending upon the county made use of the hospital. Thus it served those without homes and provided a place where nursing could be secured. The charge for paying patients was (a) \$5.00 per week in a ward with ordinary hospital fare and nursing, but no medical attention or medicines without extra charge, or (b) \$10.00 per week for a private room and special fare, with medicines and washing, other than bed linen, extra. Such patients were to be attended by their own physicians at their own expense. Paying patients might bring with them or employ nurses of their own to be boarded and lodged at \$5.00 per week. Pay patients were to advance, on entering, two weeks payment, the balance for the second week to be refunded if they left before that time. These charges went a long way toward defraying the expenses of the hospital. At the end of the first year the staff reported a total number of forty-four patients, twenty-six of them being county patients and the remaining eighteen pay patients. The new institution was a success financially as well as in every other way.

Early in these years county physicians were elected. Those who served often in this capacity were Bruno Jaehnig, O. I. Hall, A. H. Hall, O. K. Lindboe, Chas. Hill, A. T. Conley, Christian Gronvold, Galen Allen, J. V. Anderson, George Overholt, and W. L. Craddock. The salaries ranged from about fifty dollars to five hundred per year, depending on the size and population of the districts. Physicians were to furnish all medicines and all ordinary medical and surgical appliances. In 1889, we find the note that election and salaries of these men were determined without reference to applications or bids. This, apparently, was customary.

Epidemics of diphtheria were frequent in the county throughout the decade. Hardly a year passed without a minor epidemic in some locality. Some years the disease was more virulent. In 1880, several district schools were closed for a

short while and Cannon Falls had a considerable number of cases. In 1887 diphtheria invaded the Scandinavian Orphans' Home at Vasa. In 1888 it reached East Red Wing and town authorities, faced at the same time by reports of numerous cases of measles, closed the schools there. The year before, also, measles had been prevalent in this district. The *Winona Republican* facetiously reported in December that the number of cases of measles in Red Wing had decreased to less than one hundred and the doctors were rapidly "knocking the spots off their patients." A rather measley insinuation, it was suggested.

Typhoid appeared in the tenements of Red Wing in 1880 and the next year appeared in the town of Goodhue, accompanied by a threatened water famine. Mumps, in this year, was reported as very common in Kenyon. There were small outbreaks of scarlet fever, particularly in 1888, in Red Wing and in Goodhue.

About this time there were several horses with glanders in Florence township. The horses were cared for by the state board of health, though not without local controversy. Dr. George Leininger reported the death of a man who had become infected with the disease.

Aside from these, there is the case of the removal of a tumor weighing fifty pounds from a woman. The tumor had been growing for over three years. Dr. Philo Jones, assisted by Drs. Leininger, Jaehnig, Hart, Conley, and Newhall performed the operation. The size of the growth suggests the slowness with which surgeons acted in the eighties and the general lack of confidence felt by the layman in such cases. This case, however, was reported to be favorable for recovery.

Apparently there were few, if any, cases of smallpox in the county. Yet precautions were taken, judging by the increased number of vaccinations under the direction of the state board of health, and by the establishment, in Red Wing, of a pesthouse in 1882.

Notices such as the following, printed in the local newspapers, were bringing the idea of preventive measures before the public.

State Board of Health of Minn.  
Secretary's Office  
Red Wing, Minn., June 1, 1881

Editors Republican:

May I through your columns, urge upon your readers the necessity of vaccination. Smallpox is being introduced into our state by immigrants. It has appeared in New Trier, Dakota County, and I go to Todd County today to deal with the outbreak there.

The people will protect themselves and help the State Board of Health to suppress such a dreaded disease, if they will see that all children are vaccinated, and that all persons over 16 years of age are re-vaccinated.

This last precaution is very important, and I believe, should always be taken under such circumstances as the present.

Very respectfully,

Charles N. Hewitt, Sec.  
State Board of Health

P.S. Both vaccination and re-vaccination should be done by the family physician for whom the scabs of healthy children should be preserved, as there are many who prefer humanized to animal virus. Any surplus which physicians may have this board will be glad to distribute gratuitously. The animal virus may be procured fresh by sending one dollar to Dr. E. L. Griffin, Fond du Lac, Wisconsin, who will send by return ten points of such virus, enough to vaccinate ten persons.<sup>9</sup>

On the whole, such precautionary methods as sanitation and the isolating and reporting of contagious diseases were fairly well established.

9. *Goodhue County Republican*, June 4, 1881.

# President's Letter

## PREPAID MEDICAL CARE

This is the liveliest issue before our profession today. It is too early to make any declarations forecasting what shall ultimately come out of it. Divergent opinion around the world is at zenith; where lives are wasted in battle to sustain or obliterate violently contrasting ideologies the individual fades into the background. Such periods of cataclysmic revolution are ideal to dethrone leadership and inaugurate the experiments of minorities.

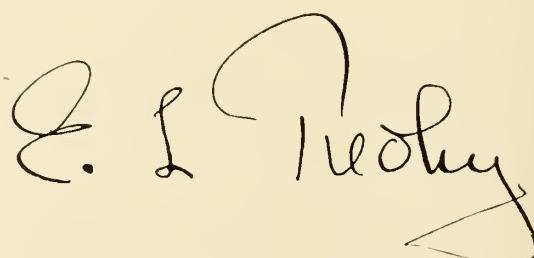
Wendell Berge, assistant attorney general of the United States, spoke in June before the American Urological Association in St. Louis. Public Health Reports\* has the scholarly address in full as has *The Journal of Urology*. There are many reasons why every practicing doctor should read the thesis on *medical organization* of the present head of the department that prosecuted the American Medical Association in the famous Washington trial. In one of the most trenchant paragraphs he disposes of that individualism so much limelighted presently:

"... a job has come to replace an equity in the old homestead . . . industry is operated by corporations, farmers band . . . into co-operatives, . . . workers, . . . into unions . . . In our culture the group has come to be the regular thing."

In an attempt to implement your association with the movement to give physician-sponsored prepaid medical care to the public through a "nonprofit Medical Service organization," an enabling act is now before our legislature. At this writing this measure has had favorable committee action; it will not be passed unopposed. It may need your forceful help with your legislative representatives and senators. The opposition will come from some of Berge's "groups"; and I have at hand a good example from a "Co-op"† paper published in Superior, Wisconsin. The lead article characterizes our bill as "a move to throttle the possible advance of socialized medicine and *consumer-controlled prepaid medical care*." At a public meeting February 9, in Duluth, where a Minneapolis doctor led the discussion on "Medical Care for All," it is reported that the lines of advocacy and disapproval of the governmental *organization of medical service* were fairly evenly divided. One returned war veteran (in uniform) offered the most salutary comment. He reported that he had worked in the mines where he had a pay deduction entitling him to medical care; at the University he was provided health service; in the army he was likewise shepherded—but in all no doctor took any special or *personal* interest in him as an individual. We may have more friends here and there than we suspect.

\*Public Health Reports, 60:1-6, (Jan. 5) 1945.

†The Co-operative Builder, Superior, Wisconsin, 20:1, (Feb. 8) 1945.



President, Minnesota State Medical Association.

# Editorial

CARL B. DRAKE, M.D., *Editor*; GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

## STATE MEETING CANCELLED

FOR the first time in many years, the Minnesota State Medical Association will not hold its annual convention. Although national medical associations had cancelled their 1945 meetings, it was hoped that regulations would not include state medical meetings, and arrangements had already been made for a scientific program and exhibits for the proposed meeting, May 20-23, 1945.

The War Committee on Conventions, under the Director of War Mobilization and Conversion James F. Byrnes, requires organizations to show why proposed conventions entailing the attendance of more than fifty persons is necessary in the war effort. Transportation and hotel facilities are already taxed to the limit by necessary war activities and unnecessary travel. We shall doubtless win the war even if our annual meeting does not materialize. Not being able to show the contrary, permission to hold the meeting has been officially denied.

The House of Delegates, however, will meet at a date which will not conflict with the AMA House of Delegates. This will be either May 20, 21 or May 13, 14. As soon as the AMA date is definitely settled, our date will be designated.

The annual meeting provides numerous scientific papers for publication in MINNESOTA MEDICINE. Those who were to have appeared on the program have been asked to submit their papers for publication. Other members of the Association are also urged to submit papers read before county societies or other medical societies.

## EPIDEMIC RINGWORM OF THE SCALP (*Tinea Capitis*)

ABOUT four years ago there appeared among school children in our eastern seaboard cities, notably in the Astoria section of the Borough of Queens in New York City, an epidemic of ringworm of the scalp due to the *microsporongaudouini* which has continued to spread progressively to large and small cities as far as Chicago and

Minneapolis and has become a problem of considerable proportions not only to public health and school authorities, but to the general practitioner, the dermatologist and their patients under fifteen years of age.

The use of suitably filtered ultraviolet light is valuable to detect characteristic fluorescence in the scaly patches of broken off hairs, and to make certain that the patient is no longer communicable to others after treatment. Susceptibility in childhood is general. Reinfection is common as there is no immunity after cure. Infection is very rare after puberty, although adults as well as children are susceptible to the *microsporongaudouini*. The disease spreads rapidly in schools, and in institutions for children. Control by public authority is difficult, but the principles involved are relatively simple.

1. All cases recognized among school children or discovered in systematic surveys of classrooms and schools with suitably filtered ultra-violet light, should be reported to the health department.

2. Infected children should be excluded from school until recovery. This may require several months of exclusion. In institutions, the infected should be separated from healthy children.

3. Stocking cap or other type of inexpensive head covering should be used on infected heads and such articles should be burned after use.

4. Terminal disinfection of classroom or home is not necessary.

5. The scalps of all children under fifteen years of age in a household or institution group in which cases have been found, should be examined by the appropriate ultra-violet light at regular intervals until the source case is completely cured, i.e., shows no fluorescence at the site of the scalp lesion.

6. On discovery of a clinical case of ringworm of the scalp, all children in the classroom should be inspected, and surveyed by suitable filtered ultra-violet light, and infected children excluded. Resurveys should be made periodically until one month after the last case is detected and excluded. If two or more classrooms are involved, or if more than 2 per cent of the children are found infected in a single classroom, the survey method should be applied to the entire school.

General measures should be encouraged, such as, cleanliness of hair and scalp, prompt and per-

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sistent treatment of the infection, preferably by x-ray epilation followed by fungicide treatment, on medical advice, education of parents as to methods of spread of the disease and measures for control, provision for individual storage of clothing in school. While the disease prevails it may be necessary to provide separate classrooms for education of children excluded from their regular classes because of scalp ringworm.

The only known source of this infection is the lesions on the scalp of infected persons; articles of clothing, especially hats and caps containing spores or infected hairs and scales shed by patients.

The infection is transmitted directly from person to person by contact with lesions of infected persons, especially in the home and in schools during games in which personal contact is close.

This disease is to be distinguished clinically and by microscopic examination of the fungus from ringworm of the body, including that of the groin and feet which affects adults as well as children.

HAVEN EMERSON, M.D.  
Visiting Professor of Public Health  
University of Minnesota

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### POLIOMYELITIS

IN SPITE of all the research which has been devoted to poliomyelitis, our knowledge does not provide means of prevention or specific cure.

We do know that poliomyelitis is caused by a virus. The causative relation of a pleomorphic streptococcus proposed by Rosenow has not been accepted by the profession. The infection attacks youths in most cases, although adults sometimes are affected. Many abortive cases occur during epidemics without ensuing paralysis. Although sporadic cases appear throughout the year, epidemics make their appearance in midsummer and cease with the advent of frost.

That most adults have at some time come into contact with the virus without developing symptoms of the infection is indicated by the fact that the blood of adults in most instances neutralizes the virus. It was previously thought that the virus entered the body through the nasal passages, which led to futile attempts to prevent infection by nasal treatment. The finding of the virus in the feces and sewage suggests that the virus enters the body through the digestive tract.

While the anterior horn cells of the spinal cord

are chiefly affected, resulting in muscle paralysis, there is evidence of widespread damage to the spinal cord and brain with changes in the posterior columns of the cord, perivascular infiltration of lymphocytes and polymorphonuclear leukocytes in the anterior horns and meningeal infiltration in all cases. Involvement of the brain stem results in respiratory failure and often death. Fortunately, in some cases all the anterior horn cells are not permanently destroyed, which permits some return of function. The involvement of the posterior columns of the cord may explain the muscle pain so frequently encountered.

The treatment of poliomyelitis has become a controversial subject. That spasm exists not only in the involved muscles but also in those uninvolved is generally accepted. The physiological effect of hot packs on the affected muscles is not clear. Some have questioned that it increases the circulation of the muscle. It does relieve pain, however, something that splints and casts did not do. The encouragement of voluntary use of the affected muscles during convalescence is most important. That local treatment of weak or paralyzed muscles can affect the destructive process in the cord is, of course, untenable. The new methods of treating poliomyelitis cannot influence the degree of paralysis, although it can produce better ultimate muscle function.

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### COMPULSORY HEALTH INSURANCE IN CALIFORNIA

THE California legislature is in the throes of a serious consideration of four statewide health insurance bills. One is for a compulsory health insurance to be conducted by the State and supported by a 3 per cent wage tax on employee and employer. This bill is backed by the CIO and the A F of L, but is opposed by business in general, the Association of White Collar Workers, the California Hospital Association and the California State Medical Association. The California Hospital and Medical Associations favor another bill which provides for voluntary medical insurance using funds derived from Unemployment Insurance to partially finance the new undertaking. Governor Warren is said to support still another.

California has its California Physicians Service which handles some 300,000 patients a year on a voluntary basis. Judging from their experi-

ence the Executive Secretary of the California Medical Association predicts that the funds which will be raised by the additional wage tax will fall short about one hundred million the first year. More millions of tax money will be required to initiate the undertaking, and the overhead will add more millions to the actual cost of medical care. The hospitals predict, and correctly, that they will not be able to care for the increased demands should the bill pass. California's 250,000 Blue Cross hospital insurance members have doubtless helped to fill California hospitals as in other states.

The argument that the extension of medical service through compulsion insurance would have reduced the 5,000,000 rejectees in the draft for World War II is used by those favoring the bill. It is pointed out, however, that if those who suffer from mental defects, cripples from natural or accidental causes, those with defective vision, and those with venereal disease were subtracted from this number it would leave 1,500,000, and it is questionable how much universal health insurance could have done for this number.

Many prepayment medical insurance plans have been instituted in various localities by medical societies. In seventeen states, these are statewide. Those that have succeeded so far are those with limited coverage of surgical and obstetrical fees. With some the overhead has been kept low by sharing the Blue Cross office setup. Insurance companies are more and more offering health insurance coverage for the more expensive medical costs. These and not the usual minor illnesses which make up the bulk of medical practice are what require insurance. If a state or the nation were to undertake full coverage for all medical expense, the cost would be enormous, but, of course, the taxpayers would make up the deficit. It will be interesting to observe the course of events in California.

#### LEO G. RIGLER—AN APPRECIATION

More than 100 friends of Leo. G. Rigler gathered at a special dinner in Minneapolis, December 9, to wish him well. The occasion was the fall meeting of the Minnesota Radiological Society, and the guest speaker was Fred J. Hodges, Professor of Roentgenology, University of Michigan, Ann Arbor. Walter J. Ude, representing the Minnesota Radiologic Society and friends of the honored guest, gave nearly \$12,000 to the University

of Minnesota to establish the Leo G. Rigler Lectureship in Radiology. This was accepted by Dean H. S. Diehl. Speakers were Robert G. Allison, George E. Fahr, E. T. Bell and others. For some time the radiologists have wanted to express to Dr. Rigler their appreciation for his untiring efforts in their behalf. When his friends in other branches of medicine heard of this proposal, they, too, wanted to help. The sum accumulated so rapidly that it quickly reached the desired amount.

Leo George Rigler was born October 6, 1896, in Minneapolis. He attended the University of Minnesota, from which he received his M.D. degree in 1920. Following an internship in St. Louis City Hospital, St. Louis, Missouri, and practice in North Dakota, he was named teaching fellow in Internal Medicine, University of Minnesota (1921-22). The following year he was appointed Roentgenologist at Minneapolis General Hospital largely as the result of his interest in the Roentgen diagnostic aspects of Medicine. He was named Associate Professor of Radiology in 1927, and Professor in 1929. In 1935 he became chief in the department and has served in that capacity to date. In 1930 the State Board of Institutions made him a consultant. In 1941 the Minneapolis General Hospital named him chief of the Department of Roentgenology. Prior to accepting the departmental appointment, Dr. Rigler completed his studies in Europe spending most of his time with Professor Forssell in Sweden. Here he also learned to speak Swedish.

He is a member of Alpha Omega Alpha, Sigma Xi, American Medical Association, Hennepin County Medical Society, Minnesota State Medical Association, Minneapolis Academy of Medicine, Minnesota Academy of Medicine, American Roentgen Ray Society, Radiological Society of North America, Minnesota Radiologic Society, American College of Radiology (fellow), American Association of Thoracic Surgery and the American Association for the Advancement of Science. Civic activities include Council of Social Agencies, Jewish Family Service Association, Minneapolis Federation for Jewish Service, Foreign Policy Association and State Selective Service Association. He is married (Matil Sprung, 1920), and has three children, Stanley, Nancy and Ruth. Dr. Rigler is the author of *Outlines of Roentgen Diagnosis* (Lippincott), Second Edition, 1943, and many scientific reports.

As long as any of us can remember, Leo Rigler has been doing things for other people. The list is long and impressive. He has arranged and organized departmental conferences with most of the other departments in the hospital, as well as with the preclinical branches. He is always ready and willing to speak at medical gatherings and to teach special courses at the Center for Continuation Study. His contributions to graduate training include not only service to members of his own department but service to practically every other clinical department. He has been instrumental in putting life and vigor into the Minnesota Radiological Society and he has been active in the councils of national associations. In recent years he has made a large contribution to Wartime Graduate Medical Meetings through his visits to all the hospitals in our area. It is

From the Staff Meeting Bulletin, Hospitals of the University of Minnesota, Dec. 15, 1944.

## EDITORIAL

at clinical pathological conferences that he is at his best, standing in front of the group, calling attention to what he sees and giving his conclusions just ahead of the pathologist with his postmortem report. He has been associated with roentgenology during its greatest period of development, and he has made a significant contribution to this specialty.

It is just and fitting that this honor should come to him. The only regret is that everyone who likes Leo and appreciates what he has done could not participate in the offering. The University of Minnesota has been a better place because of his contributions and all of us look forward to profitable years of association with him.

W. A. O'BRIEN, M.D.

### MINNESOTA NURSING COUNCIL FOR WAR SERVICE

The Minnesota Nursing Council for War Service made the following statement on January 15, 1945:

"Because of the recent radio and newspaper publicity relative to drafting of graduate nurses we would like to have every one interested in nursing know the facts about Minnesota.

"A survey of nurses in Minnesota showed approximately 8,000 in the state. More than 2,500 nurses have volunteered for military service, about 800 from the St. Paul area. Minnesota oversubscribed their 1943 and the first six months of 1944 quota. Nationally the 8,000 nurse quota for military service for January 1 to July, 1944, was filled to within 2 per cent of the goal. At this point local committees were told that we need recruits for replacement only.

"The work of survey, of classification of procurement and assignment has been almost 100 per cent on a volunteer basis by nurses already carrying double work loads.

"The work of recruiting 60,000 students a year for the cadet nurse corps was also done by volunteer nurse service and Minnesota met each goal.

"We realize that the sudden change in the war situation, with the enormous increase in casualties, calls for more personnel. We have tried to get money for full time workers to assign to an increasingly complex job, but neither public nor private funds are forthcoming.

"Minnesota nurses and those over the country have long felt that a national service act might be the answer but we feel that if we could have full time workers, Minnesota would meet the quota of 537 set for January to July, 1945. To date 361 nurses have been classified as available and 240 have already volunteered."

**EDITOR'S NOTE:** The above is being published for general information because some of the publicity about this acute shortage of nurses in the various services have been rather disparaging to the nursing profession. The above explanation indicates that the nursing profession in Minnesota, particularly, has done its patriotic duty and there is every indication that the increased need for nurses will be met as promptly as possible. This does not minimize the great need for many more enlistments at once.

### CLINICAL-PATHOLOGICAL CONFERENCE

(Continued from Page 210)

and negative bronchoscopic and bacteriologic studies. The lack of widespread metastatic involvement is also characteristic of this tumor. We were unable to find any source from a primary elsewhere in the body, including a careful search of the bronchi. Finally, the histologic structure is one of marked pleomorphism with some areas resembling epithelial-lined spaces and other areas distinctly sarcomatous. The resemblance to synoviomas arising from the synovial membranes of the joints is striking. Dr. E. T. Bell commented that this case was the most convincing he had ever seen of a mesothelioma of the pleura.

### Discussion

**DR. RILEY:** The history of the present concept of the nature of primary malignant neoplasms of the pleura is a long and disputed one. Much of the discussion concerning this tumor rests upon the disagreement as to the embryological origin of the cells lining the pleura cavities. The Hertwigs showed years ago that the lining cells of the pleural and pericardial cavities developed from coelomic epithelium which split from the mesoderm. The name "mesothelium" is generally preferable to the term "endothelium" in describing the lining cells of the pleura. We should restrict the name "endothelium" to cells lining blood vessels and lymph spaces. The term "mesothelioma" is hence preferable to "endothelioma" in describing these tumors. There is no proof that these tumors arise from subpleural lymphatic vessels. The mesothelial cells have the ability to differentiate into more than one type of cell. Maximow<sup>1</sup>, by tissue culture, showed that mesothelial cells can form fibroblasts and collagenous fibers. Young<sup>2</sup> produced a squamous and transitional cell metaplasia in the pleural cavities of rabbits by injection of Sudan III and sodium cholate in olive oil. Tumors arising from the pleura have a tendency towards marked pleomorphism, as one would expect in view of their origin. The diagnosis of primary pleural malignancy should always be made with caution. Robertson<sup>3</sup>, in 1924, pointed out many of the earlier mistakes and showed that most of the reported cases were examples of metastatic tumors. These tumors are quite rare. In a recent article, Postoloff<sup>4</sup> reported finding only four cases in 20 years at the Toronto General Hospital. Males predominate almost two to one, and the greatest number of cases occur between the ages of 40 and 60 years. Clinically there is usually an insidious onset with chronic pleural effusion. The course is a long and protracted one. One characteristic feature is the pain associated with thoracentesis. Often the symptoms of chest pain and dyspnea are made worse by aspiration. Metastasis is a late feature and usually not marked. There is no satisfactory treatment.

### References

1. Maximow, A. A.: A Textbook of Histology. 38 pp. Philadelphia: W. B. Saunders, 1931.
2. Postoloff, A. V.: Arch. Path., 37:286, 1944.
3. Robertson, H. E.: J. Cancer Research, 8:317, 1924.
4. Young, J. S.: J. Pathol. & Bacteriol., 31:265, 1928.

# MEDICAL ECONOMICS

Edited by the Committee on Medical Economics

of the

Minnesota State Medical Association

George Earl, M.D., Chairman

## MINNESOTA'S ENABLING ACT INTRODUCED

The machinery for permitting the establishment of nonprofit prepaid medical service in Minnesota was set in motion recently by the introduction of an Enabling Act in both Houses of the Legislature.

The Committee on Public Policy, with Council approval, swung into action as a result of a mandate from the House of Delegates at the annual meeting last spring to prepare specific legislation for presentation to the Legislature.

### Strong Backing from Legislators

The Bill received strong backing from legislators in both houses and was favorably reported out of their respective committees and placed on general order for early consideration.

The purpose of the Act is set forth in Section 1—"to make possible a wider and more timely availability of medical care, thereby advancing the public health and the science and art of medicine in this State."

The Act provides for incorporation by not less than twenty-one persons, "all of whom shall be legal residents of this State and duly licensed and registered doctors of medicine under the laws of this State," with a stated capital of not less than \$25,000 with which the corporation may begin business.

The full text of the Act follows:

#### A BILL

FOR AN ACT TO PROVIDE FOR THE INCORPORATION AND REGULATION OF VOLUNTARY NONPROFIT MEDICAL SERVICE PLAN CORPORATIONS; AND TO PRESCRIBE PENALTIES FOR THE VIOLATION OF THE PROVISIONS OF THIS ACT.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MINNESOTA:

Section 1. It is the purpose and intent of this act, and the policy of the Legislature, to make possible a

wider and more timely availability of medical care, thereby advancing the public health and the science and art of medicine in this State.

Section 2. Every nonprofit medical service plan corporation shall be organized under and in accordance with the provisions of this act by not less than twenty-one (21) persons, all of whom shall be legal residents of this State and duly licensed and registered doctors of medicine under the laws of this State.

Such nonprofit medical service plan corporation shall have the right to establish, maintain and operate a voluntary nonprofit medical service plan, whereby the services of duly licensed and registered doctors of medicine are provided in the manner hereinafter specified at the expense of such corporation to persons who become subscribers to said plan under contracts which entitle such subscribers to specified medical and surgical care, appliances and supplies, by such duly licensed and registered doctors of medicine. Such medical and surgical care, appliances and supplies may be provided in their entirety or in part as such corporation may determine and as set forth in such contracts. The term "subscribers" shall include all persons covered under such contracts.

All such nonprofit medical service plan corporations shall be subject to, and, governed by the provisions of this act, and shall not be subject to the laws of this State relating to insurance, and insurance companies, except as hereinafter specifically provided.

No such medical service contract by or on behalf of any such nonprofit medical service plan corporation shall provide for the payment of any cash indemnification by the corporation to the subscriber or his estate on account of death, illness or other injury.

Section 3. Articles of Incorporation shall be signed and acknowledged by each of the incorporators and shall state the following:

- (a) The name of the corporation, such name not to include the words "insurance," "casualty," "surety," "mutual," or any other words descriptive of the insurance, casualty or surety business.

The corporate name shall not be the same as, nor deceptively similar to the name of any other domestic corporation.

- (b) Its purposes, which shall be in strict conformity with the provisions of this Act, and which shall

## MEDICAL ECONOMICS

clearly set forth that all medical and surgical care provided a subscriber under such contract, shall be rendered by a duly licensed and registered doctor of medicine of the subscriber's own choice.

- (c) The name and post office address of each of the incorporators.
- (d) The duration of the corporation, which may be limited or perpetual.
- (e) The location and post office address of its principal office for the transaction of its affairs in this State.
- (f) Such provisions as may be desired, if any, defining the terms and conditions of membership therein which the incorporators may have agreed upon and which they desire to have set forth in such articles.
- (g) The amount of stated capital with which the corporation will begin business, which shall not be less than \$25,000.

Articles of incorporation may contain any other provisions, consistent with the laws of this State, for regulating the corporation's affairs.

Section 4. I. The articles of incorporation shall be filed for record with the Secretary of State. If the articles conform to law he shall, when all fees and charges have been paid as required by law, record the same and issue and record a certificate of incorporation which shall state the name of the corporation and the fact and date of incorporation.

II. Upon the issuance of the certificate of incorporation the corporate existence shall begin. Such certificate of incorporation issued by the Secretary of State shall be conclusive evidence of the fact of incorporation.

III. Within fourteen days after the issuance of the certificate of incorporation, the corporation shall cause to be published once in a qualified newspaper in the county wherein it has its registered office, a notice stating the name of the corporation, the date of its incorporation, the general nature of the business being, or about to be conducted by it, the address of its registered office, and the names and addresses of the incorporators and of the first board of directors. Proof of the publication of such notice shall be filed with the Secretary of State within ten days after its publication. If a corporation shall fail to comply with the provisions of this subdivision it shall forfeit to the State \$50.00.

Section 5. The Secretary of State, after recording in his office the articles of incorporation, shall file a copy of such articles duly certified by him, for record in the office of the Register of Deeds of the County in which the principal office of the corporation is situated and shall also file a like copy so certified by him, with the Commissioner of Insurance. There shall also be paid to the Secretary of State, for transmission by him to such Register of Deeds, and to such Commissioner of Insurance, a sum sufficient under existing laws to pay the proper fees of the Register of

Deeds and the Commissioner of Insurance for recording such instruments.

Section 6. No such nonprofit medical service plan corporation shall enter into any contracts with any subscribers for medical and surgical care, appliances and supplies, nor secure any applications therefor, unless there is actually available, in the corporation, for working capital, the sum of not less than \$25,000, and not less than three copies of each type of contract proposed to be issued by said corporation shall have first been filed with the Commissioner of Insurance; the sum contributed as the working capital of such corporation shall be repayable only out of surplus earnings of such corporation, and after adequate and reasonable reserves to assure the faithful performance of such contracts are provided for.

Section 7. Every subscriber under such nonprofit medical service plan shall receive a copy of the contract and such contract shall clearly state the medical and surgical care, appliances and supplies to be provided under such contract and the rate charged such subscriber. Every subscriber shall have, at all times, free choice of the doctor of medicine who is to treat him and such right shall be prominently printed in such contract. The personal and direct relationship between patient and physician shall not be restricted in any manner. No employee, agent, officer or member of the board of directors of any such corporation shall directly or indirectly influence or attempt to influence any subscriber in the choosing and selecting of the doctor of medicine who is to treat him.

Section 8. No nonprofit medical service plan corporation shall enter into any contract, agreement or understanding, directly or indirectly, with any physician and surgeon whereby such physician and surgeon shall render any services to any subscriber, but all such matters shall be a matter of agreement directly between the patient and the doctor of medicine selected by the patient to treat him.

Section 9. In case of emergency or expediency, and subject to the approval of the governing body of such nonprofit medical service plan corporation, the benefits to which a subscriber is entitled to under his contract, may be rendered in another state or country, provided such services are rendered by a duly licensed doctor of medicine in such other state or country.

Section 10. Every nonprofit medical service plan corporation may, as determined by its board of directors, or as provided in its articles of incorporation or by-laws, limit the benefits that it will provide, and may divide such benefits as it determines to provide, into various classifications, including general and special medical and surgical care benefits and such services and supplies as may be incidental to such medical and surgical care.

Section 11. The funds of every nonprofit medical service plan corporation shall be invested only in those securities and property designated by the laws of this state for the investment of the capital, surplus and other funds of domestic life insurance companies.

Section 12. All medical and surgical care rendered to a subscriber under his contract shall be in accord-

ance with the accepted standards of medical practice prevailing in the community in which such service is rendered.

All such medical and surgical services shall be rendered by doctors of medicine duly licensed and registered to practice their profession in the State of Minnesota, except as otherwise provided in Section 9 of this Act.

Section 13. No action at law based upon or arising out of the patient-physician relationship shall be maintained against any such nonprofit medical service plan corporation.

Section 14. Every such corporation shall annually, on or before the last day of March, file with the Commissioner of Insurance, a statement verified by not less than two of its principal officers showing the financial condition of such corporation as of the 31st day of December next preceding.

Section 15. The commissioner of insurance, or any deputy or examiner designated by him, shall have the right, at all reasonable times, to free access to all books and records of such corporation in all matters pertaining to its financial condition, and may summon and examine, under oath, the officers and employees of such corporation in all such matters. The expense of any such examination of its books and financial condition shall be borne by such corporation.

Section 16. A nonprofit medical service plan corporation may be wound up and dissolved either voluntarily or involuntarily. If the proceedings are voluntary, they may be conducted either out of court or subject to the supervision of the district court. If involuntary, they shall be subject to the supervision of the district court. In either event the dissolution shall be in accord with the proceedings for dissolution under the Minnesota Business Corporation Act.

Section 17. Any person, or any officer or agent of such a corporation, who violates any of the provisions of this act, or who shall make any false statement with respect to any report or statement required by this act, shall be guilty of a misdemeanor.

Section 18. Every corporation subject to the provisions of this act may, in the manner provided for in its articles of incorporation, amend its articles of incorporation in any manner not inconsistent with the provisions of this act.

Section 19. Nothing in this act shall authorize any person, association or corporation to engage, in any manner, directly or indirectly, in the practice of healing or the practice of medicine as defined by law.

Section 20. The various provisions of this act shall be severable and if any part or provisions shall be held to be invalid it shall not be held to invalidate any other part or provisions hereof."

### Poll Reveals Minnesota Sentiment

That Minnesota would welcome the adoption of some form of low-cost family medical care on a monthly payment plan is borne out by a poll conducted throughout the state recently.

This poll disclosed that 83 per cent of the people of Minnesota favored some form of medical service similar to the existing Blue Cross program of hospitalization; that 48 per cent favored government sponsorship; 28 per cent, medical profession sponsorship; 21 per cent were undecided, and 3 per cent had no opinion. The geographical breakdown shows farmers are a good deal less inclined than city dwellers to approve a monthly payment plan like those incorporated in hospitalization contracts, probably because they participate less in group hospitalization.

To the question, "Do you believe doctors of medicine are doing a good, fair or poor job for your community?" 77 per cent voiced favorable responses.

There, apparently, is a much larger percentage of uncrystallized sentiment in Minnesota than on the National level where those favoring some sort of government control has run as high as 75 per cent in some polls.

### Editorial Comment Favorable

Editorial comment relative to the Enabling Legislation proposed here is very commendable. The *Minneapolis Star Journal*, commenting on the appearance before the senate health committee of Dr. A. W. Adson of Rochester, Chairman of the Sickness Insurance Committee of the Minnesota State Medical Association, has this to say:

"Testimony of Dr. A. W. Adson of the Mayo Clinic Friday before the Minnesota senate health committee must have struck a responsive chord in many a breast. Gist of his testimony was that 'medical care should be extended to all classes regardless of their economic status.'"

Citing the benefits to wage earners, the editorial continues:

"The very rich and the very poor are better off in America than their counterparts anywhere in the world, as regards medical care. . . . But for many a man working for wages or on a salary there is a sense of frustration at each new story of a medical science triumph. He knows it either is not for him and his family or that he can get it by pledging himself to months or years of sacrifice. . . . What is wanted . . . is simply a revision of the economic structure of medicine so that adequate medical care can be brought within the capacity of wage and salary earners to pay without incurring crushing obligations of debt. Whether the revision should take the form of new insurance arrangements, more group practice or some other sys-

## MEDICAL ECONOMICS

tem remains to be worked out. But it is encouraging to find Minnesota's senate busy on the problem and to know that men of the calibre of Dr. Adson back the reform."

However, it must be remembered, that enabling legislation is just a step in the direction of providing prepaid medical service. The next step will have to come from the medical profession, itself, to develop an organization that will put the plans into operation.

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### MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

**J. F. Du Bois, M.D., Secretary**

#### Henderson Physician Pleads Guilty to Narcotic Indictment

Re United States of America vs. Joseph A. Duclos, M.D.

On January 16, 1945, Dr. Joseph A. Duclos, seventy-two years of age, Henderson, Minnesota, entered a plea of guilty in the United States District Court at Mankato, to an indictment charging three violations of the Harrison Narcotic Law. In the first count, Dr. Duclos, a licensed physician, was charged with writing a fraudulent prescription for one Gust C. Lange, an informer for the Federal Bureau of Narcotics, the prescription calling for 20  $\frac{1}{4}$  gr. Morphine Sulphate Hypodermic Tablets, and being written for Lange under the name of Harold Erickson. The prescription was filled at the Knutson Drug Store at Chaska, Minnesota. In the second count, Dr. Duclos was charged with a similar violation of writing a fraudulent prescription for 22  $\frac{1}{4}$  gr. Morphine Sulphate Hypodermic Tablets for the same individual, and in the third count, Dr. Duclos was charged with selling 100  $\frac{1}{4}$  gr. Morphine Sulphate tablets to the same informer for the government for \$25.00. The Hon. Matthew M. Joyce, United States District Judge, suspended the imposition of sentence because of the defendant's age and the poor condition of his health. Dr. Duclos was put on probation for three years and warned by the Court that any further violation of the Harrison Narcotic Law will result in his being incarcerated in a Federal prison.

Dr. Duclos graduated from Laval Medical College at Montreal, Canada, in 1898. He was licensed in Minnesota by examination in April, 1902. He has spent his entire medical career at Henderson, Minnesota. Dr. Duclos has been ordered to appear before the Minnesota State Board of Medical Examiners and show cause why his license as a physician should not be revoked.

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#### Minneapolis Abortionist Sentenced to One Year in Workhouse

#### *Re State of Minnesota vs. Alida Toivonen*

On February 13, 1945, Alida Toivonen, forty-six years of age, entered a plea of guilty to an information charg-

ing her with the crime of abortion. The defendant was sentenced by the Hon. Paul W. Guilford, Judge of the District Court of Hennepin County, to a term of one year in the Minneapolis Workhouse. Judge Guilford told the defendant that after she had served six months, she could apply to the Court for parole, but that in the event she was paroled, she would have to be on probation for an additional eighteen months.

The defendant, who holds no license to practice any form of healing in Minnesota, but who claims to have taken a correspondence course in nursing from the Chautauqua Nursing School, was arrested on February 1, 1945, by Minneapolis police officers, following an investigation of her activities by the Women's Bureau of the Minneapolis Police Department. The investigation was instituted after a twenty-year-old white girl was admitted to Minneapolis General Hospital suffering from the after-effects of a criminal abortion. The patient stated that she was pregnant by a Negro and that Mrs. Toivonen performed an abortion on her for \$35.00, the money being furnished by another Negro. The abortion was performed by means of instruments at the home of the defendant at 83 Royalston Avenue, Minneapolis, on January 22, 1945. The patient became seriously ill and was removed to the Hospital on January 25. Police officers in searching the defendant's home found numerous surgical instruments and a large variety of medicine. Bank books were also found indicating that the defendant had approximately \$10,000 in cash in various Minneapolis banks.

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## NEW HEALTH EDUCATION UNIT

A Health Education Unit has been established under the Preventive Medicine Service, Office of The Surgeon General, which combines the functions of the education branches formerly under the Tropical Disease Control Division, the Sanitation and Hygiene Division and the Venereal Disease Control Division.

The primary purpose will be to continue the health education of troops after they have received their formal training and to this end the new Unit will develop educational material on the individual soldier's role in malaria and typhus control, prevention of trench foot and other individual measures that protect the soldier's health. It will make use of many of the educational methods so successfully pioneered by the Venereal Disease Control Division.

Captain Granville W. Larimore, MC, former Chief of the Education Branch, General Disease Control Division, has been appointed Chief of the Health Education Unit. Assisting him will be Captain Vincent I. Hack, MAC, former Chief of the Education Branch, Sanitation and Hygiene Division.

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## ARMY NEUROPSYCHIATRIC NURSING SCHOOLS

Neuropsychiatric nursing schools are now in operation in five service commands and within the next few months will be established in all service commands in the United States. These schools offer a three-month, on-the-job training course under the country's leading neuropsychiatrists. Enrollment is made up of Army nurses who volunteer for the training and a certificate of neuropsychiatric nursing is awarded each on completion of the course. At least two neuropsychiatry nurses are assigned to each general hospital in this country and to the staff of each general hospital organized here for service abroad.

# Minneapolis Surgical Society

Meeting of November 2, 1944

The President, Daniel MacDonald, M.D., in the Chair

## CARCINOMA OF AMPULLA OF VATER

STANLEY R. MAXEINER, M.D., F.A.C.S.  
Minneapolis, Minnesota

Although carcinoma of the ampulla has been reported and known to exist for a long time it has been of little surgical interest until recent years. Attention has been called to the fact that the lesion is small, metastasizes late or not at all and that it is open to surgical attack.

Halsted first excised a growth from the ampulla of Vater in 1898. This was a transduodenal operation from which the patient survived seven months. W. J. Mayo in 1900 and 1901 performed a two-stage operation for removal of a tumor of the ampulla. Codivilla in 1898 performed block removal of the head of the pancreas and a large section of the duodenum in one stage. A Roux Y type of gastro-intestinal restoration of continuity was used and the gall bladder was anastomosed to the jejunum. In 1913 Outerbridge reviewed 110 cases of carcinoma of the ampulla in which only 22 were treated by radical surgery. In more recent years greater impetus has been given to the attack upon this disease by the great surgical advances that have taken place. Among these are better pre-operative preparation of the patient, supportive treatment during surgery, better anesthesia and blood transfusions. Vitamin K has greatly reduced the threat of hemorrhage in the jaundiced patient. The recent works of Whipple, Parsons and Mullins, and Brunschwig have brought before the profession tremendous successes in this still virgin field of surgery.

Carcinoma of the ampulla of Vater, according to Springer, may arise from the lower end of the common bile duct, in the ampulla, the duct of Wirsung or from the mucosa within the duodenum. It remains a small lesion and spreads along the duct and the surface of the duodenum.

Because of its location it usually is productive of early symptoms. These may first be related to a general lack of well-being, anorexia, nausea, vomiting, anemia and loss of strength and weight. Jaundice usually appears early, the result of common duct obstruction but is not constant or necessarily progressive. It may be associated with pain so that this feature cannot be counted upon to differentiate it from common duct stone. Bleeding from an undisclosed digestive tract lesion accompanied by diarrhea of acholic stools should suggest carcinoma of the ampulla. The age incidence affords little diagnostic aid as it varies from thirty upward.

The preoperative diagnosis of common duct obstruc-

tion is usual and operation is exploratory in purpose. Occasionally the distended gall bladder can be palpated and at operation Courvoisier's law is apparent. Whether or not surgical operation is indicated may be difficult to decide but the determination of an obstructive jaundice usually is conceded adequate cause for exploration.

Surgical treatment is either palliative or radical and is determined after weighing the findings. The presence of distended gall bladder and bile ducts and palpation of a small, hard, rounded mass at the site of the ampulla are the determining factors. However, Walters emphasizes the fact that 15 to 20 per cent of jaundice-producing tumors in the head of the pancreas are inflammatory in which case palliative measures are adequate.

Radical surgery consists of a transduodenal attack in which the ampulla, the end of the common duct and the duct of Wirsung, together with a generous amount of the surrounding duodenum, are removed.

The second radical procedure advocated and described by Whipple resects the head of the pancreas, common duct and duodenum and the immediate gland-bearing tissue. Several modifications are now advocated by others in attempted improvements and simplicity of technique but in principle, remain the same. The cut-off end of the pancreas may be anastomosed to the small bowel or it may be transfixed and ligated. In the first instance, external secretion is restored to the digestive tract while in the second instance it is lost completely. Drainage is essential to anticipate a leak of juice from the cut surface of the pancreas. The total loss of pancreatic juice is compatible with life as is also total removal of the pancreas.

Hunt, in a review of 124 cases from 1898 to 1941, found the surgical mortality rate to be, "29 per cent in ninety-three cases of transduodenal excision; 40 per cent in five cases of retroduodenal excision; 45.5 per cent in eleven cases of resection of the duodenum with implantation of the common duct or common duct and pancreatic ducts and end-to-end anastomosis of the duodenum, and 26.6 per cent in the fifteen cases of resection of the duodenum and head of the pancreas," an average rate of 30.6 per cent for the entire series.

Gray and Sharp quote Orr's discussion of Hunt's article as follows: "Following palliative operation a patient with proven carcinoma of the ampulla has been known to live thirty-three months; after transduodenal resection patients have lived four to twenty-two years; and after resection of the duodenum and pancreas one patient has lived thirty-four months, although the average length of life in each of these groups is much shorter. Orr summarized the findings of various au-

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thors concerning the average time of survival of patients who had carcinoma of the ampullar region as follows: 7.3 months when no treatment was given (Outerbridge); 7.7 months when palliative operation was employed (Judd and Parker); eight months when treatment with radium and roentgen rays was given (Pack and McNeer); more than 1.7 years after radical operation according to Hunt's data on the thirty patients in his series who had died and more than 2.5 years after radical operation according to Hunt's data, on thirty-four patients who were living at the time of his report." Although, according to Hunt's figures, transduodenal resection presents the best outlook, the Whipple method subscribes best to the principles of radical surgical treatment of cancer.

### Case Report

J. M. C., aged forty-eight, a laborer, height 5 feet 6 inches, weight 111 pounds, was admitted on June 13, 1944, complaining of jaundice and pruritus for the past six weeks.

About six weeks prior to admission yellow discoloration of the sclera was noted and remarked on by a fellow worker. Within a few days his skin became yellow, he consulted his family physician and was given some pills. In spite of treatment the jaundice became rapidly and progressively deeper, and his skin began to itch. At that time he noticed that his urine had become darker and his stools almost white. These symptoms persisted and became daily more intense. In addition, for one week prior to admission, he had mild diarrhea, some bloating after meals and his abdomen had begun to feel distended. There was a weight loss of 7 pounds in the past six weeks.

Past history was negative except for the usual childhood diseases; otherwise he had always been in good health.

Examination revealed a well-developed, well-nourished white male, small in stature, chronically ill, with a deep olive-yellow jaundice. The skin was covered with multiple superficial scratches. Temperature was 98.4°; pulse, 84; respiration, 18.

The abdomen was moderately distended and a firm, flat mass was palpable lying across the upper abdomen. This mass had an edge about four fingers below the costal margin and in addition a projection of this mass could be felt to extend down into the right lower quadrant which was thought to be a distended gall bladder. No tenderness or rigidity was present and although ascitic fluid was suspected, no fluid wave could be demonstrated. The spleen could not be palpated. There were no other significant findings on physical examination.

Pre-operative laboratory work revealed the following: Wassermann, negative. Blood count when rechecked a few days after admission showed red blood cells, 5,250,000; hemoglobin, 100 per cent; leukocyte count, 16,750; polymorphonuclears, 62 per cent. Icterus index was 64; Van den Bergh showed direct diphasic reaction. The serum contained 13.2 milligrams bilirubin per 100 c.c.; in a few days it had risen to 14.2 milligrams. Prothrombin time was first reported 110 per cent of normal; a later recheck was 75 per cent normal. Blood N.P.N., 26.8; blood sugar, 73. Total serum protein, 5.66 milligrams. Urine showed 3 plus albumin with occasional cast and was positive for bile.

X-rays of the gastro-intestinal tract were normal except for a reported filling defect of the transverse colon just distal to the hepatic flexure. This defect was thought to be due to extrinsic pressure. X-rays of the chest revealed an irregular, nodular infiltration of the left apex which had not been present on x-rays taken February 14, 1940, and was diagnosed as tuberculosis.

chronic, pulmonary, minimal. Subsequent sputum examinations were negative for tubercle bacilli.

The abdomen was explored on July 5, 1944, through a right upper rectus incision. At operation no free fluid was found in the peritoneal cavity. The liver was markedly enlarged, was deep olive green, very firm and the edge extended to four fingers below the costal margin. The gall bladder was enlarged, markedly distended and thin walled. The common bile duct was dilated to the size of a thumb. An irregular mass about the size of a black walnut was palpated in the region of the ampulla of Vater. This mass did not have the consistency of a stone and was attached to the wall of the duodenum in the region of the ampulla of Vater and to the underlying pancreas. The pancreas was movable over the deep vessels and no nodes could be palpated in this region, in the hilum of the liver or in the liver itself.

*Procedure.*—The gall bladder was aspirated of bile stained fluid which on culture contained a nonhemolytic streptococcus of the Gamma type. An aseptic, anticolic cholecystojejunostomy was done, using a long jejunal loop as recommended by Lahey as a first-stage resection of ampulla of Vater and head of the pancreas. The abdominal wound was closed with wire sutures.

His postoperative course was uneventful. The jaundice rapidly cleared from the sclera, his stools became brown and his urine clear. The skin, however, remained pigmented and during the first two or three days of his immediate postoperative course he was troubled with a mild atelectasis which, however, cleared under conservative treatment. Sputum studies at this time continued to be negative for tubercle bacilli but a type 18 pneumococcus was isolated.

Icterus index on July 21, 1944, was 26; bilirubin, 3.7 milligrams; Van den Bergh, direct diphasic. Icterus index on July 26, 1944, was 17; on August 3, 15, and on August 7, 11. N.P.N. on August 7, 38.9; chlorides, 47.8; sugar, 84; total serum protein, 6.05 gms. At that time bromsulphthalein liver function test levels were as follows: 98.2 per cent dye retention after five minutes; 15.8 retention after thirty minutes; 11.4 retention after sixty minutes.

A flat radiograph of the abdomen revealed the intrahepatic duct system to be outlined with gas.

The second stage of the operation was performed on August 10, 1944, one month after the first stage was done. Weight at that time was 103 pounds.

Under continuous spinal anesthesia the abdomen was opened through a transverse incision. The adhesions were rather extensive in the region of the gall bladder and biliary ducts but they were not insurmountable. The mass in the region of the ampulla of Vater had remained about the same size and consistency. The cholecystojejunostomy was found to be functioning well. Following appropriate dissection the common bile duct was severed and ligated one-half inch below the junction of the cystic and hepatic ducts with chromic catgut. The retroperitoneal duodenum was severed just to the right of the superior mesenteric vessels and the distal stump turned in with three layers of chromic catgut and a layer of black silk. The stomach was divided at approximately the junction of its middle and distal thirds. The pancreas was severed just to the right of the portal vein. A small, undilated pancreatic duct found in the stump of the pancreas was doubly ligated with chromic catgut and the stump of the pancreas was transfixed with interrupted mattress sutures of chromic No. 1 catgut, and then buried in the retroperitoneal tissues. Thus a block of tissue containing the distal one-third of the stomach, the first, second and third portions of the duodenum, most of the common bile duct and the head of the pancreas was resected. Inspection of the bed from which this tissue was removed revealed a small lymph gland just to the right of the ligated stump of the common bile duct and this was removed for histological

study. An end-to-side retrocolic gastrojejunostomy was made, using the jejunal loop distal to the functioning cholecystojejunostomy. The region of the stump of the pancreas was drained with a penrose drain through a midline stab wound incision. The wound was closed with stainless steel wire.

During this operation the patient received one blood transfusion, four units of plasma and a liter of glucose. He experienced no hemorrhage, practically no change in pulse rate or blood pressure and left the operating room in excellent condition.

The pathological report of the tissue removed revealed an adenocarcinoma of the head of the pancreas and metastatic malignancy in the lymph gland removed separately. The primary lesion was the ampulla of Vater.

His immediate postoperative course was uneventful. A pancreatic fistula followed removal of the drain and has been kept open to date because the patient gets severe abdominal pain when scar tissue contracture closes off the sinus.

On September 14, 1944, he developed acute, generalized abdominal pain with marked tenderness in the right lower quadrant of the abdomen with a white blood count of 25,000 and polymorphonuclears, 95 per cent. The abdomen was re-explored, he was found to have an acute appendicitis and the appendix was removed. His immediate convalescence from this was uneventful except that he began to lose weight and strength, and appeared to be fading out in spite of a prodigious appetite. His weight on September 30 was 85 pounds.

On October 1, 1944, we began collecting pancreatic juice from his fistula and feeding it back through a nasal tube. The pancreatic drainage was found to be 450 to 600 c.c. every twelve hours. Since that time the patient has gained in weight and strength steadily, and has improved markedly in general appearance until at the present time he weighs 98 pounds, is up and about and feeling well except for some intermittent abdominal pain.

This patient was operated upon by the radical techniques recommended by Whipple for carcinoma of the ampulla. His prognosis, as in all cases of malignancy, is necessarily uncertain. At the present time we have to contend with a persistent pancreatic fistula which may or may not close by itself. In case of a persistent drainage which seems altogether likely we must contemplate returning the flow of pancreatic juice to the digestive tract which may be done successfully by burying the fistulous tract in the side of the small intestine.

### Discussion

**MAJOR KEAN F. WESTPHAL:** The patient wears a catheter cannulating the tract of the postoperative pancreatic fistula, and through this catheter the pancreatic fluid drains without difficulty and very little leakage. He has been taught to collect this fluid and to take the collected drainage morning and night through a nasogastric tube, which he has learned to insert himself. At the present time he is getting along nicely and is going home this week.

**QUESTION:** How much is he draining now?

**MAJOR WESTPHAL:** He drains between 650 to 1,000 c.c. in a twenty-four-hour period.

Since a small lymph gland discovered and removed from the region of the stump of the ligated common bile duct reportedly showed malignant change, it is ques-

tionable whether an attempt to close this fistulous tract is indicated.

**QUESTION:** What did you tie off the duct with?

**MAJOR WESTPHAL:** We used chromic No. 1 catgut mattress sutures to close the stump of the pancreas and the same material to doubly ligate both the pancreatic duct and the common bile duct.

**QUESTION:** How soon did he start draining?

**MAJOR WESTPHAL:** He started draining a sero-sanguinous fluid within forty-eight hours. This became gradually more sero-purulent. In about two weeks a string-like piece of necrotic tissue about three inches long was sloughed out. Culture of the slough revealed the presence of streptococci and staphylococci, but histologically its origin was not identified. Shortly after this slough came out, the drainage became serous and has continued to be so since that time. At first we did not think the drainage amounted to a great deal and we hoped the fistula would close spontaneously. However, the patient lost progressively in weight and strength and became quite apathetic. Attempts were then made to collect the fistulous drainage. We were surprised to find that it amounted to from 650 to 1,000 c.c. in a twenty-four-hour period. We immediately began giving it back to him through a naso-gastric drip and immediately his condition began to improve. The most remarkable change was the development of a voracious appetite and the loss of his apathy. He has been slowly gaining in weight.

**DR. CLARENCE DENNIS:** I should like to say one or two words. This has been a most interesting paper. Dr. Maxeiner has presented a very comprehensive view of the problems involved.

I have explored some twenty-four cases of carcinoma of the head of the pancreas in the past four years. At the University Hospitals, I believe there have been five resections in this time period, three from my series, one by Dr. J. R. Paine and one by Dr. R. L. Varco. Also, three cases of carcinoma of the ampulla of Vater have been locally resected, and a fourth has been subjected to radical pancreaticoduodenectomy.

In one case in which local excision was performed, the pancreatic duct was found not to be dilated. It was assumed therefore, that there were other ducts still patent, and this one was ligated successfully without attempts at anastomosis.

Surgery in this portion of the abdomen is complicated by the very high frequency of vascular anomalies. In one case of radical resection, Dr. Varco and I found the portal vein to pass in front of the pancreas. In another I found the hepatic artery to arise from the superior mesenteric and to traverse the head of the pancreas we were trying to resect before reaching the portal of the liver.

Doctor Maxeiner's has been a very instructive and interesting case, and I would like to commend him on his result.

**DR. S. R. MAXEINER (closing):** This patient has now had a pancreatic fistula over a sufficient time to have a thoroughly established tract. I believe it will be possible in a reasonable length of time to transplant the outer end of the sinus into the bowel and sidetrack all of the external drainage to its proper location in the bowel. We know that the patient had a carcinoma of the ampulla and with it, a metastatic gland. As a result, there is no logic in transplanting it until we are sure that the patient's duration of life will make this a worth-while procedure.

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## SURGERY IN RELATION TO CHRONIC NON-SPECIFIC ULCERATIVE COLITIS

Experience at the University of Minnesota Hospitals

CLARENCE DENNIS, M.D.  
Saint Paul, Minnesota

Chronic nonspecific ulcerative colitis is not a common disease, but the misery and mortality of the patients suffering from it and the satisfaction to be derived from the proper management of it draw more attention than frequency alone would allow.

The cause of the disease is open to debate. Bargen points out properly that one must differentiate the disease under discussion from tuberculous colitis, colitis due to lymphopathia venereum, colitis due to amebic or bacillary dysentery, and other forms. He believes most chronic ulcerative colitis to be due to a diplostrep-tococcus. His view is not universally accepted, and a large portion of authors group the majority of these cases as "idiopathic" or "non-specific" chronic ulcerative colitis.

Other authors have offered various explanations for the disease. Some stress the functional factor. R. A. Jensen of our Psychiatric Clinic for Children, has studied eight cases in children rather carefully from the psychiatric angle. He found that these children all had rigid personalities, an unyielding character, set exact standards for themselves, were not free and spontaneous in type, and usually were more intelligent than the average. He feels that in each of these cases the onset of diarrhea has been related to some unusual circumstance in the family relationship. As a rule, no consideration had been given to the psychiatric aspects of these cases until the patients came here. Jensen was able to find special circumstances in the individual experiences of the children underlying each exacerbation of the disease, and in each case there had been smouldering suppressed resentment against the family. He felt that in any case of diarrhea in a child in whom no specific diagnosis can be made in two to three weeks, the psychiatric aspects of the problem should be considered. In many of the adult cases coming to the surgical service, some of us have felt that far too little attention has been paid to these considerations.

The importance of allergic reactions to a variety of foodstuffs has been stressed by numerous writers. Andresen is particularly impressed by the frequency of sensitivity to milk. Rowe has reported a small series of cases in which exacerbations of the disease were conclusively traced to inhalants such as ragweed and thistle pollen.

Various vitamin deficiencies have been incriminated, particularly those of the B-complex. Studies have been undertaken to determine the importance of variations in activity of the various digestive enzymes.

It is apparent that no single cause has been positive-

ly established and it seems likely that in each case a multiplicity of factors is at work.

*Pathology.*—The congested mucosa early becomes inflamed, bleeds easily on contact, and small hemorrhagic areas appear. Tiny abscesses form in these areas, and coalesce to form ulcers varying in size from pin-point to 2 or 3 cm. in diameter, with shaggy, undermined edges. As the process advances, more mucosa is destroyed, until in some cases only islands of mucosa remain, leaving a pseudopolyposis. All the layers of the bowel become involved in the inflammatory process, with marked thickening and fibrosis. The walls of the colon become thickened and rigid, and as the lumen becomes smaller, actual obstruction occasionally occurs. Perforation with abscess formation or peritonitis is an important cause of death while hemorrhage from vascular erosion is the second important cause of death. Fistulae and abscesses about the anal canal are frequently seen. When pseudopolyposis is present, malignant degeneration not infrequently occurs; pseudopolyposis is therefore regarded as a strong indication for colectomy.

The pathology of the disease may vary considerably from case to case. At the Cleveland Clinic, Jones reported 93 per cent of the cases started with disease in the rectum, and then spread to upper segments with successive attacks. Others report a higher incidence of this type, and give the impression that widespread involvement, even to the cecum, or occasionally into the terminal ileum, is an early result of the disease. Localized segmental involvement occurs in about 5 per cent of the cases.

*Symptoms and Course.*—Ulcerative colitis may be classified under three general headings (Table I).

TABLE I. TYPES OF NONSPECIFIC ULCERATIVE COLITIS

1. The fulminating type.
2. The very mild type.
3. The more common type—marked persistently by sufficient disease to prevent near-normal activity or by frequent exacerbations of such severity.

1. Ulcerative colitis may be ushered in as an overwhelming disease characterized by profuse stools of blood, mucus, and pus passed fifteen to thirty times a day with high or spiking fever, prostration, abdominal cramps and pain plus signs of peritoneal irritation. It may subside in the course of a few days or weeks or it may progress to a rapidly fatal outcome on the basis of inanition, sepsis, peritonitis, or massive hemorrhage.

2. On the other hand, it may begin in an insidious fashion, with mild cramps or diarrhea, later presenting mucus in the stools. As the process advances and ulceration develops, the stools may occasionally become frequent, purulent, and bloody. It may remain a mild disease which responds at once to medical management. Apparently, a somewhat more common course, however, is a prolonged one characterized by exacerbations and remissions. Usually the patient never becomes entirely well, but gets along well enough to continue work except during the exacerbations. There is just

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tification for medical management of some such cases.

3. Between the fulminating cases on the one hand, and the mild ones on the other, the majority of patients with ulcerative colitis will fall. The disease is constantly severe enough or marked by exacerbations of sufficient severity to prevent continuance at work or even at restricted activity. Chronic bleeding and loss of plasma, as demonstrated by Welch, lead to marked or moderate inanition and anemia, and these patients are difficult to handle because of loss of strength, impaired resistance to surgical procedures, and lack of ability to take an adequate diet without increasing the diarrhea.

The degree of weight loss in patients in the severe phases of the disease is greater than that seen in any other group of surgical patients at the University of Minnesota Hospitals. We have had several who have lost 35 per cent of the body weight, and one lost almost 50 per cent.

The complications of perforation, hemorrhage, and sinus formation have already been mentioned. Polyposis occurs only in the chronic cases, and carcinoma is a complication in this group. Arthritis, thrombo-phlebitis, achlorhydric gastritis, endocarditis, iritis, and other lesions seem to be late complications.

**Diagnosis.**—Diagnosis of ulcerative colitis is not usually difficult to establish, but to differentiate the chronic nonspecific type from other types is less simple. The patient usually looks chronically ill, underweight, and apprehensive. The abdomen is moderately to markedly tender to palpation. The chief complaint is usually of diarrhea, but may be of ischiorectal abscess, fistula, or other complication. The diagnosis of colitis is largely settled by examination of the stool for pus, blood, and mucus, proctoscopy, and barium enema x-ray examination.

The proctoscopic appearance is one of a swollen, congested mucosa with a granular appearance, which bleeds easily on contact, usually with myriads of small ulcers, and sometimes larger ones. There are usually no areas which look entirely normal.

Barium enema x-ray examination is usually fairly typical. Early in the disease there may be a fine featherlike irregularity of the mucosal pattern. Later the hastrations are partly lost; they are totally lost still later in the disease. Because of spasm and scarring, the lumen is decreased markedly and the bowel is shortened. The caliber is fairly uniform. All these changes give rise to the "lead pipe" appearance considered so typical of the disease. Ladd and Gross feel the wide distribution of these changes is characteristic, and that it serves to differentiate nonspecific from amebic colitis, which usually involves chiefly or solely the right colon.

Mention of the important conditions which must be differentiated is necessary. Tuberculous enteritis may be recognized by careful general study of the patient and ileac barium injection through a Miller-Abbott tube. The bacillary dysenteries should be excluded by blood agglutination studies. Amebiasis can usually be recognized by repeated examinations of the

fresh stool, but it is customary to give a diagnostic trial of emetine nevertheless.

**Medical Therapy.**—The number of different measures employed in the medical management of ulcerative colitis is testimony of the lack of specificity of any form of therapy. Certain measures are generally accepted as of definite value. Strict bed rest and a low residue or bland diet are usually effective measures for tiding over exacerbations. The use of the vitamin B complex, especially thiamine, and of liver extract seems to be widely accepted. Brewer's yeast, cavitamic acid, and a host of other vitamin preparations have been added to the pot. Mackie has summarized present medical management and favors, in addition to the measures already mentioned, use of hydrochloric acid by mouth in those with achlorhydria, mild sedation, as with phenobarbital, and adequate mineral intake, bearing in mind that the involved colon is normally the site of absorption of most minerals. Andresen has called particular attention to the importance of allergic reactions to the development and perpetuation of ulcerative colitis, and favors elimination diets and a thorough allergic study on each patient.

As already indicated, more attention should be paid to the psychiatric study of these patients than has been the custom here in the past.

The advent of the sulfonamides brought new hope. Some are enthusiastic, but the general concensus of opinion seems to be that, although the bacterial count of the feces may be decreased by such drugs as sulfanylguanidine and succinyl sulfathiazole, yet no change in the course of the disease has been demonstrated consistently to occur.<sup>10,22,26,80,28</sup>

Various other procedures, popular some years ago, such as irrigation of the colon with Dakin's solution, have been abandoned.

**Medical Versus Surgical Management.**—An extremely wide difference of opinion exists about the part which surgical intervention should play in the management of patients with nonspecific ulcerative colitis. Most of the publications up to a few years ago indicated the internist's horror of the plight of the patient left with a permanent ileostomy. It has been appreciated that this is a disease in which more or less prolonged remissions are the rule, and therefore the temptation has constantly been to delay active treatment in the sicker patients in the hope that such a remission might occur.

Examples of the diversity of opinion on the choice of procedure are illustrated by the following. Mackie advises a thorough trial of conservative management for several months preferably, and avoids surgical measures to divert the fecal stream from the colon until proctoscopic examination and barium enema study show that irreversible changes are occurring. Willard and associates are almost bitterly opposed to surgery in this disease, basing their contentions on the finding of a high death rate in those referred for surgery late in the disease. The general concensus of opinion among the surgical authors, however, seems to be that the

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high mortality following surgical intervention has occurred in patients who have reached a terminal status before reference by the internist.<sup>7,16,18</sup> Certain surgeons have suggested the performance of ileostomy in the first few weeks of the disease, for a fair portion of these recover and can successfully have the ileostomy closed.<sup>8,17,18,29</sup>

A fair comparison of figures has been presented by Elsom and Ferguson, internist and surgeon, respectively, of the Hospital of the University of Pennsylvania. They selected two groups of patients with disease of comparable severity and treated approximately half by surgical procedures, and the remainder by the more conventional medical management. The findings indicated that in all respects, survival, weight gain, ability to return to work, and present health, those treated surgically did better than did those in the other group.

### Surgical Therapy

*Ileostomy—Indications.*—The indications for surgical intervention are as diverse as the opinions of the value of surgery. Those listed recently in the surgical literature are fairly uniform, and include the following indications:

1. Emergency indications:
  - (a) Uncontrollable hemorrhage
  - (b) Acute ulcerative colitis with profound toxemia (fulminating cases)
  - (c) Impending perforation
  - (d) Obstruction
2. Elective indications:
  - (a) Chronic ulcerative colitis resisting all forms of medical treatment.
  - (b) Segmental ulcerative colitis.
  - (c) Very early ulcerative colitis.
  - (d) Polyposis including those cases with possible malignancy.

An impression of the variation in indications is gathered from the fact that at the Mayo Clinic the proportion of cases treated surgically has progressively declined from 20 per cent in the period from 1919 to 1923 to 1.4 per cent in the period from 1932 to 1936<sup>5</sup>, while in the same period at the Massachusetts General Hospital 65 per cent of cases were treated surgically.<sup>21</sup> In a discussion published with McKittrick's report of these figures, Dr. Daniel Jones of Boston questioned whether the classification of cases as ulcerative colitis was uniform in all clinics, also the criteria of cure.

Prior to about 1930, surgical treatment consisted of appendicostomy, cecostomy, and occasionally colostomy. Garlock states, "The purpose of these procedures was to permit irrigation of the diseased bowel with medicated solutions in the hope of restoring the mucosa to normal. Experience in recent years has shown that this therapy was based upon fallacious reasoning. It is important to emphasize that the first requisite of successful surgical treatment is complete diversion of the fecal stream from the diseased bowel segment." This can be accomplished only by terminal ileostomy.

The general indications for major surgical interven-

tion, aside from drainage of abscesses, have been discussed. The procedure to be done in any of these circumstances is ileostomy. Attempts to close perforations have all been reported unsuccessful. Attempts to do primary large or small resections with primary anastomosis have all proved too risky save in a few cases of segmental disease in which the process was too quiescent to reveal the true nature of the ailment until examination of the specimen by the pathologist. In short, any patient with severe enough ulcerative colitis to require surgery needs an ileostomy first, and a period of months or even years should pass before further procedures are undertaken.

*Technique of Ileostomy.*—The manner of performance of ileostomy has received too little attention. It is probably true that most patients with ileostomy will heal the operative wound satisfactorily without special precaution, but it is virtually impossible to tell which of the patients seen will have more than usually irritating ileac drainage and will therefore develop breakdown of the wound. The procedures recommended in the literature uniformly involve bringing a single-barrel or a double-barrel ileostomy out through the wound, and closure of the wound about the bowel. This type of procedure has been abandoned at this clinic.

These patients are regularly in extremely poor condition, and shock is easily induced. McKittrick's conclusions are in agreement with our own, that spinal anesthesia certainly should not be used for ileostomy, and general anesthesia also is better avoided. He favors the use of local anesthesia insofar as possible, a choice we also have adopted.

*Response to Ileostomy.*—Following performance of ileostomy, all are agreed that the majority of patients improve rapidly. The temperature frequently returns to normal in one or two days, the appetite returns, the rectal discharges diminish quickly, and thereafter the weight gain is marked and fast. One of our patients gained 56 pounds in two months after ileostomy. Those for whom the ileostomy is done as an emergency for bleeding have generally been observed to cease to suffer hemorrhage within a few days.

*Other Factors in the Performance of Ileostomy.*—The most trying complication of ileostomy is digestion of the wound by the unspent ferments of the ileac secretions. If the wound is not carefully protected early, the line of closure in the wound adjacent to the ileostomy is likely to break down and suppurate. Healing of such defects is slow and painful, for the wound is constantly soaked with intestinal discharge, and the ultimate results are not satisfactory. A wound so healed is ever subject to fresh digestion and can make the patient miserable indefinitely. Most satisfactory elimination of this problem has been accomplished by bringing the proximal end of the ileum out through a stab wound apart from the main incision. The distal end is closed and returned to the abdomen. The bowel

heals to the skin readily, and this process seems seldom to be delayed by secretions.<sup>†</sup>

Digestion of the skin about the ileostomy is equally trying. Apparently somewhat more than half of these patients have little difficulty regardless of the care given, but the others suffer from obstinate erosion of the skin. There are repeated references in the literature to the belief that this erosion subsides as soon as the involved colon has been removed. This has not been our experience here.

Various methods have been proposed to treat this skin erosion, but all are agreed that prevention of it in the first place is far simpler than management after it has developed. Most authors say little of this trouble, but careful reading of their reports indicates that the patients must have been made miserable by this complication. Numerous pastes and ointments have had their day, but in the experience of the Clinic here, that of Ladd and Gross is the only satisfactory one. They recommend a combination of zinc oxide ointment, castor oil, and aristol, made up into a thick paste. Others have favored yeast paste or aluminum paste. Pressman suggested use of a vinylite resin preparation which can be coated onto the skin, but this layer is quickly freed from the skin by the ileac secretions, and therefore gives little protection.

John R. Paine called our attention here to the use of the Koenig ileostomy bag, a description of which was published by Baker.\* This bag has a rubber facing which is fixed with rubber cement to the skin about the ileostomy stoma. The bag facing has an opening made to order to fit about 2 mm. around the slightly projecting bowel. In my experience, the use of rubber cement and rubber dam to protect the skin in the first few postoperative days, until a bag can be fitted, offers an excellent means of prevention of ulcerations and erosions. This may also be accomplished with Ladd and Gross' paste. The bag in my opinion offers the only satisfactory way to care for the ileostomies in these patients after they have become ambulatory.

*Further Surgical Management.*—In general, the opinion of those dealing with this disease is that colectomy should be done if two bouts of acute colitis occur after ileostomy. It should also be done if pronounced drainage continues for more than a few months after ileostomy. Pseudopolypsis is precancerous and should dictate both ileostomy and colectomy, but the last 12 cm. of rectum, which can be watched with the proctoscope, may be saved in the hope that later healing will permit ileoproctostomy.

In performing colectomies, McKittrick, Lahey, and Cave have recommended staged operations, utilizing as many as four procedures to complete removal of colon and rectum, and they all suggest the upper end of the segment left after each operation be brought through the abdominal wall as a mucous fistula, for secure closure cannot be assured in the involved colon.

\*The details of the technique employed at the present time are published elsewhere. (*Surgery*—In press).

†This is now obtained from H. W. Rutzen, 1819 Irving Park Road, Chicago.

In the experience here this procedure has proved nearly disastrous, and we feel that if the entire colon is to come out, it should be removed with the rectum, if the rectum is to be removed, in one stage, for this has given excellent results. The leaving of a mucous fistula has led in at least one instance to marked persistent pyoderma and deterioration of the patient, compromising subsequent management.

Rankin recommends removal of the colon to a point below the peritoneal reflection with inversion of the end and closure of the peritoneum above the closure. The rectum can then be observed at intervals, and, if sufficient healing occurs, ileoproctostomy may subsequently be done. Adequate inversion has been difficult to obtain, for the walls are thickened and infected, and the lumen is small; pelvic abscess was a frequent complication until methods of secure closure were developed. These are to be reported elsewhere.<sup>‡</sup> This is nevertheless the procedure of choice, particularly in males, in whom impotence is the usual sequel of proctectomy.

A final type of procedure should be mentioned, namely, reconstitution of the normal fecal pathway, either by simple closure of the ileostomy or by anastomosis, at some time after ileostomy, of the end of the ileum to the lower sigmoid or upper rectum with removal of the intervening bowel. Either of these procedures is predicated on prior complete healing of the bowel from the proposed anastomosis to the anus.

Stone, Ladd and Gross, and Cattell have all reported series of cases of successfully closed ileostomies. They all stress that ileostomy must be done very early in the disease if subsequent closure is to be tolerated without recurrence of symptoms of colitis.

#### Experience with Chronic Ulcerative Colitis at University of Minnesota Hospitals

1934 to 1944

In the ten years from January 1, 1934, to January 1, 1944, eighty-two patients with chronic or acute non-specific ulcerative colitis have been seen at the University of Minnesota Hospitals. Fifty-seven of these have been treated solely by nonoperative means as far as the ulcerative colitis is concerned, although some of them had drainage of perineal abscesses or other incidental surgery performed. Three patients are included in this group who were treated by conservative means until death was inevitable, and then were subjected to operation. (Two of these came to operation with perforation, massive pneumoperitoneum, peritonitis, and marked inanition; the third after having been septic and comatose for several days.) It should be emphasized that comparison of results achieved by conservative as opposed to operative management is not to be construed as a comparison of the relative merits of one Department in the hospital as against another, but rather as a comparison of methods of therapy. Many of those managed conservatively early in the period of this study were treated on the Surgical Service. We are fortunate here in that the co-operation between the Medical Service and the Surgical

‡*Surgery* (In press).

# MINNEAPOLIS SURGICAL SOCIETY

TABLE II. GROSS MORTALITY FIGURES OF CONSERVATIVE VERSUS SURGICAL MANAGEMENT ULCERATIVE COLITIS

	No. of Cases	Died under therapy		Died later		Total mortality	
		No.	%	No.	%	No.	%
Conservative	57	16	28	0	16	28	
Surgical	25	2	8	1	3	12	
Total	82	18	22	1	19	23.2	

TABLE V. INDICATIONS FOR SURGERY IN ULCERATIVE COLITIS 1934 to 1944 University of Minnesota Hospitals

	Fulminating disease	Hemorrhage	Progressive disease	Sealed Perforation	Polyps	Total
Ileostomy	7	1	10 <sup>1</sup>	1	1	20
Colostomy	1 <sup>2</sup>					1
Segmental Resection				1		1
Primary Colectomy and Ileoproctostomy			2			2
Primary Total Colectomy and "Pull-through"			1			1
Total	8	1	14	1	1	25

1. One death due to improper surgery.
2. Patient died.

TABLE III. CAUSES OF DEATH IN CASES OF ULCERATIVE COLITIS TREATED CONSERVATIVELY

1934 to 1944 University of Minnesota Hospitals	
Died solely of disease proper.....	10 <sup>1</sup>
Died of complications of chronic ulcerative colitis....	4 <sup>2</sup>
Died of other disease plus chronic ulcerative colitis....	2 <sup>3</sup>
Total .....	16 (28%)

1. One was admitted terminally and died in three hours. Three went through surgery on the way to the morgue; one had sepsis and coma for days, two had perforations.
2. One of sepsis, one of thrombophlebitis, two bronchopneumonia.
3. One obstructive jaundice and cerebral hemorrhage, one myxedema.

TABLE IV. STATUS OF PATIENTS WITH ULCERATIVE COLITIS TREATED CONSERVATIVELY WHEN LAST SEEN

1934 to 1944 University of Minnesota Hospitals	
Improved .....	19
Unimproved .....	18
Worse .....	4 <sup>1</sup>
1. Two of these refused ileostomy and left.	
Complications: Large psychiatric component.....	12
Polyposis .....	4
Others .....	3

Service has been excellent, at least throughout the period when I have observed it.

Twenty-five individuals were treated surgically for ulcerative colitis.\* These cases have excited the interest of various members of the surgical staff and have therefore been carefully followed, while there has been no one particularly interested in those treated conservatively, and the follow-up in a large proportion of those cases is nonexistent or only of a few weeks.

A comparison of the overall mortality figures of conservative as against surgical management is offered in Table II.

The medical therapy is not the subject of this review. An analysis of the causes of death in the conservative group is given in Table III. It should be borne in mind that the follow-up was poor and that many of those listed as surviving have probably since died.

The status of those surviving on conservative management is given in Table IV.

The indications under which surgery was undertaken and the results thereof are indicated in Table V.

As has already been stated, a great deal of trouble was encountered in the healing of ileostomy wounds until the adoption of the method of ileostomy indicated

\*The author wishes to stress that the care of these patients was a joint effort. First Dr. O. H. Wangensteen, and later Drs. W. T. Peyton, W. H. Manson, and John R. Paine have been active in the care of these patients, and many of the conclusions presented in this paper, and certainly many of the successful cases, come from the efforts of this group as a whole rather than from the writer alone.

TABLE VI. INCIDENCE OF WOUND BREAKDOWN IN ILEOSTOMIES

	Primary Healing	Disruption of Wound	Late Hernia or Prolapse	Late Stenosis
Ileostomy made in incision	14	7 <sup>1</sup>	3	1
Ileostomy made as described	6	0	1	0

1. Three healed after 1 to 12 months. Three were redone after 6 months to 3 years. One died from massive wound breakdown and skin excoriation.

Total ileostomies ..... 27  
Total ileostomy patients ..... 22

above. The results with ileostomy are indicated in Table VI.

Evaluation of the factors contributing to erosion of the skin is impossible because there are inadequate notes in the charts concerning care of the skin, but in several of the earlier cases in which the measures outlined were not used, extreme erosion occurred. One case required transplantation of the ileostomy because of erosion alone, and another died of erosion and wound breakdown. In the cases in the past one and a half years, which is the time in which the ileostomy has been made as described and in addition carefully protected by rubber dam and cement, there has been none but the most insignificant erosion.

Fourteen patients have been subjected to colectomy of one type or another, and there have been no deaths in association with these operations, all patients being alive at the end of the study period. The present status of these patients as well as that of those not yet having undergone colectomy is indicated in Table VII.

*Comment.*—One rightly concludes from Tables V and VII that we have ample evidence in our own series of cases that when operation is necessary in the management of ulcerative colitis, the procedure should be ileostomy and nothing else, for no other procedure has left us with a good result without subsequent operation. In other words, "shortcut" operations made in an effort to spare the patient one operation and the inconvenience, even if temporary, of an ileostomy have not been successful.

It is my impression, therefore, that the colon should be put at rest for a period of months or years and until complete subsidence of the inflammatory process in the

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TABLE VII. PRESENT STATUS (JAN. 1, 1944) OF PATIENTS SUBMITTING TO OPERATION FOR CHRONIC ULCERATIVE COLITIS					
	1934 to 1944	University of Minnesota Hospitals	Good	Fair	Poor
Ileostomy only		31	34	2*	2*
Ileostomy, later colectomy including rectum	4	1 <sup>5</sup>	1 <sup>6</sup>	0	
Ileostomy, later colectomy leaving rectum	2	0	0	0	
Ileostomy, later colectomy and anastomosis to sigmoid or rectum	1	1 <sup>7</sup>	0	0	
Primary colectomy and "pull-through"—subsequent ileostomy	1 <sup>8</sup>	0	0	0	
Primary colectomy and ileoproctostomy	0	1	1	0	
Segmental colectomy	0	1	0	0	
Colostomy	0	0	0	1	
Total		11	7	4	3
		(45.8%)	(29.2%)	(16.7%)	(8.3%)

1. One of these is now seriously ill (May 1944) after effort at resection and anastomosis to involved rectum. Recovered.  
 2. One still has some rectal discharge, one has Simmond's Disease and one had skin erosion when last seen, 1941.  
 3. One refused colectomy for polyps and has carcinomatosis now. One has cancer, presumably.  
 4. One died of cancer of rectum; one of improperly done ileostomy.  
 5. Had only mucosa of rectum removed—still drains.  
 6. Has ventral hernia and poor healing of perineal wound.  
 7. Has small (3 cm.) ventral hernia. Later repaired.  
 8. Very poor control after first operation; erosion of skin of perineum and buttocks, weight loss, pain. Later had ileostomy improperly done, later properly revised, now well.  
 N.B. 4 cases of polyposis—2 of these developed cancer, possibly a third.

rectum or lower sigmoid before attempts are made to remove the colon in these patients and anastomose the ileum to the pelvic colon.

In the majority of patients with advanced disease, this reanastomosis will never become feasible. In those given ileostomy very early it may become the rule.

## Conclusions

1. Careful surgical management seems to offer patients with nonspecific ulcerative colitis better hope of survival and good health than the medical therapy employed today.

2. Heavier emphasis should probably be placed on the psychiatric aspects early in the disease. It is possible that combination of this and early ileostomy will offer more effective therapy than we have had in the past.

3. When surgery is necessary, ileostomy is the procedure of choice. If it is done properly, the artificial anus causes most patients little difficulty.

4. Colectomy is indicated for polyposis, recurrent bouts after ileostomy, or hopelessly damaged colons. It should be done in one stage.

5. Very early ileostomy should be contemplated in a series of cases to test the promising suggestion that closure with good results will later be possible.

## References

- Andresen, A. F. R.: Gastro-intestinal allergy; its present status. *South. M. J.*, 34:418, 1941.
- Baker, Joel W.: Ileostomy preliminary to resection of gastro-jejunocolic fistula. *Northwest Med.*, 39:398, 1940.
- Bargen, J. Arnold: The management of ulcerative colitis. *Gastroenterol.*, 1:449, 1943.
- Bargen, J. Arnold: The Modern Management of Colitis. Springfield, Illinois: Charles C. Thomas, 1944.
- Buié, L. A.: Practical Proctology. Philadelphia: W. B. Saunders Co., 1937.
- Cave, H. W.: The surgical treatment of intractable, chronic ulcerative colitis. *Ann. Surg.*, 107:806, 1938.

- Cave, H. W., and Thompson, James E.: Mortality factors in the surgical treatment of ulcerative colitis. *Ann. Surg.*, 114:46, 1941.
- Cattell, Richard B.: Closure of ileostomy in ulcerative colitis. *Ann. Surg.*, 115:956, 1942.
- Cheney, G.: Vitamin B<sub>1</sub> and liver extract in the treatment of nonspecific diarrhea and colitis. *Am. J. Digest. Dis.*, 6:161, 1939.
- Crohn, B. B.: The clinical use of succinyl sulfathiazole. *Gastroenterol.*, 1:140, 1943.
- Daniels, Geo. E.: Psychiatric aspects of ulcerative colitis. *New England J. Med.*, 226:178, 1942.
- Dragstedt, Lester R., Dack, G. M., and Kirsner, J. B.: Chronic ulcerative colitis. A summary of evidence implicating *Bacterium necrophorum* as an etiologic agent. *Ann. Surg.*, 114:653, 1941.
- Elsom, Kendall A., and Ferguson, L. Kraer: An appraisal of the medical versus the surgical treatment of idiopathic ulcerative colitis. Follow-up data on fifty cases. *Am. J. M. Sc.*, 202:59, 1941.
- Garlock, John H.: The surgical treatment of intractable ulcerative colitis. *Ann. Surg.*, 113:2, 1941.
- Jensen, R. A.: Personal communication.
- Jones, Thomas E.: The surgical treatment of ulcerative colitis. *J.A.M.A.*, 111:2076, 1938.
- Ladd, William E., and Gross, Robert E.: Abdominal Surgery of Infancy and Childhood. Philadelphia: W. B. Saunders Co., 1941.
- Lahey, Frank H.: Ulcerative colitis. *New York State J. M.*, 41:475, 1941.
- Lium, R.: Observations on etiology of ulcerative colitis. *Am. J. M. Sc.*, 197:841, 1939.
- Mackie, Thomas T.: The medical management of chronic ulcerative colitis. *J.A.M.A.*, 111:2071, 1938.
- McKittrick, Leland S., and Miller, Richard H.: Idiopathic ulcerative colitis: A review of 149 cases with particular reference to the value of, and indications for, surgical treatment. *Ann. Surg.*, 102:656, 1935.
- Mills, M. A., and Mackie, T. T.: The chemotherapy of chronic ulcerative colitis. *Am. J. Digest. Dis.*, 10:55, 1943.
- Presman, David: A new method of skin protection for ileostomies and colostomies. *Surgery*, 13:322, 1943.
- Rankin, Fred W., Bargen, J. Arnold, and Buie, Louis A.: The Colon, Rectum, and Anus. Philadelphia: W. B. Saunders Co., 1932.
- Rankin, Fred W., and Johnston, Coleman C.: Chronic ulcerative colitis; special considerations of its treatment. *South. M. J.*, 34:466, 1941.
- Rodaniche, E. C., Kirsner, J. B., and Palmer, W. L.: Effect of the oral administration of sulfonamide compounds on the fecal flora of patients with nonspecific ulcerative colitis. *Gastroenterol.*, 1:132, 1943.
- Rowe, Albert H.: Chronic ulcerative colitis—allergy in its etiology. *Ann. Int. Med.*, 17:83, 1942.
- Spink, W. W.: Sulfanilamide and Related Compounds in General Practice. 2nd ed., Chicago: Year Book Publishers, 1942.
- Stone, H. B.: Chronic ulcerative colitis. *Pennsylvania M. J.*, 32:211, (Jan.) 1929.
- Streicher, M. H.: Sulfonamides: clinical evaluation in infectious diseases of the colon. *M. Clin. North America*, 27:189, 1943.
- Welch, C. S., Adams, M., and Wakefield, E. G.: Metabolic studies in chronic ulcerative colitis. *J. Clin. Investig.*, 16: 161, 1937.
- Willard, J. H., Pessel, J. F., Hundley, J. W., and Bockus, H. L.: Prognosis of ulcerative colitis. *J.A.M.A.*, 111: 2078, 1938.

## Discussion

DR. HARRY W. CHRISTIANSON: Thromboulcerative colitis-idiopathic ulcerative colitis is a disease of manifest fascination and intrigue, which, during twenty-five years past, has occupied a prominent position in medical literature. Primarily, I feel, it is a systemic disease, the cardinal lesions of which are localized in the colon. It might be said, that in resorting to surgery in its management we accept an attitude of defeatism. A few years ago I firmly believed that surgery was to be resorted to in but a limited number of cases, namely, those with serious complications. Further, it seemed that the disease was firmly entrenched in the wall of the colon and, hence, the performance of an ileostomy allowed the diseased bowel to remain behind, to be dealt with at a later date. One assumed that ileostomy, therefore, merely complicated the situation by adding a "second rectum."

It is apparent that surgery has a greater role in the management of ulcerative colitis. Dr. Dennis advocates ileostomy early in the course of the disease, earlier than has heretofore been generally suggested. In retrospect, and in reviewing the presented data, it seems that we

## MINNEAPOLIS SURGICAL SOCIETY

have been tardy, if not reticent, in suggesting ileostomy in the management of this disease.

At the outset it is to be understood that we are considering thromboulcerative colitis and excluding any of the other types of ulcerative colitis, such as tuberculosis, amebiasis, allergic colitis, colitis with avitaminosis, bacillary colitis, lymphogranuloma venereum or the unknown types 2 and 3 of Bargen.\* These are separate and distinct entities which must be painstakingly excluded by exhaustive clinical study and laboratory procedure, in order to establish the differential diagnosis. Each requires separate and distinct therapy.

Although ileostomy seems, at this time, to be of considerably more value in the management of ulcerative colitis than was formerly believed, I cannot as yet concur with the present suggestion as to the exact time of its performance. To do an ileostomy in every early case which exhibits an insufficient or delayed initial response to medical or conservative management seems too radical an approach. I have had the opportunity to observe a large number of patients with this disease who responded well to conservative therapy. As I see them today, fully recovered, I would have felt guilty, in the least, had I subjected them to the hazard and discomfort of an ileostomy; for, in the majority of hands this procedure is fraught with difficulty and danger. The surgical skill and ingenuity manifested by the excellent results Dr. Dennis has presented, might distract us from the real dangers attendant to this procedure. He has developed a meticulous technique together with a painstaking and exhaustive pre-operative and postoperative regime of care in the management of these patients. Further, in this connection, it is interesting to note that this procedure is only effected, in his hands, under local anesthesia.

Certain fairly definite indications for ileostomy and probably for subsequent partial or total colectomy, seem apparent at this stage in development of our knowledge of the management of thromboulcerative colitis. On the other hand, certain other situations encountered in this disease seem to contraindicate these surgical procedures. Ileostomy does not seem advisable as an emergency measure; nor does it seem advisable in instances of perforation of the bowel, or of acute fulminating thromboulcerative colitis. Stricture formation, pseudo-polyposis or dual abscesses and fistulae, regardless of the time element, constitute indications for ileostomy. Early thickening of the bowel wall, because of its potentiality for forming intramural abscesses, constitute an absolute indication for ileostomy. The development of polyposis or pseudo-polyposis in the colon of ulcerative colitis renders ileostomy mandatory, coupled with a subsequent colon resection. The occurrence of multiple anal abscesses or fistulae dictates the almost immediate performance of an ileostomy.

To withstand surgical procedure the patient with ulcerative colitis must be in comparatively satisfactory condition. Manifest starvation and exhaustion, so often noted in patients with this disease, when it has been allowed to progress, constitutes a situation most difficult to adjudicate. Further unimpeded progression of the disease leads unequivocally to rapid exodus, while on the other hand, the addition of the surgical trauma of an ileostomy most frequently eventuates in the same conclusion. The status of this patient is already so far gone that recovery cannot be effected. The physiological pre-operative preparation of these patients, as employed by Dr. Dennis, considerably reduces this hazard. However, we are in agreement on the point that the patient should not be allowed to progress to this extreme status of affairs, but rather, that an ileostomy should be performed sufficiently early to obviate this possibility.

The time for the performance of a colectomy, after preliminary ileostomy, must be ascertained in each indi-

vidual case. I agree that one should not be in haste, but, rather, that one should allow sufficient time to elapse in order to ensure complete subsidence of inflammation of the affected bowel. In some cases the rectum can be preserved and an ileoproctostomy effected. This procedure should be reserved for those ileostomy patients in whom the stools have become solid (all suggestion of watery or liquid stools or diarrhea has subsided). Further, before this procedure can be contemplated all inflammation and ulceration in the rectum must have abated.

In conclusion, I wish to state that Dr. Dennis should be commended for his painstaking labors in obtaining his remarkable results. Thromboulcerative colitis constitutes a severe and mysterious malady with which in many respects we are still unfamiliar, and, it is only with work such as that which has just been presented that progress is made.

DR. DENNIS (closing): I would like to add a few words. In the first place, I am very flattered to have been asked to talk tonight. It has been a much appreciated privilege.

I want to say a word about Doctor Christianson's remarks. I am impressed with his bringing out one indication for ileostomy which I had overlooked, and that was the matter of abscess and fistula formation in the rectum. I happen to know of one case in which this was the indication for which ileostomy was performed. Doctor Paine did the procedure, as that was before my interest in the disease.

In this matter of hemorrhage, my series has been limited to but one case, so what I say about hemorrhage should be taken with many grains of salt. In this case bleeding was profuse, over a liter of blood every day before ileostomy.

The conclusions in the patients we have been able to follow are that the patients who develop ulcerative colitis are never entirely free of trouble and are always subject to exacerbations of the disease.

I am glad Dr. Christianson brought out the matter of the type of colitis under question. My comments have been intended to apply to nonspecific ulcerative colitis, and not to the other types.

ERNEST R. ANDERSON, M.D.  
*Recorder*

## PEDIATRIC-PATHOLOGICAL CONFERENCE

(Continued from Page 208)

of life. The less accessible rectal fistulae may at times be better corrected when the child is older. Those near the perineum can frequently be closed without much difficulty.

*Final Diagnosis.*—(1) Congenital anal stenosis, (2) fecal impaction of rectum, (3) chronic partial intestinal obstruction, (4) emaciation.

## References

1. Ladd, William E., and Gross, Robert E.: Congenital malformations of anus and rectum. *Am. J. Surg.*, 23:167-183, (Sept.) 1934.
2. Lee, Madison J.: Congenital anomalies of the lower part of the rectum. *Am. J. Dis. Child.*, 68:182-189, (Sept.) 1944.
3. Wangensteen, O. H., and Rice, C. O.: Imperforate anus. *Ann. Surg.*, 92:77, 1930.
4. Wilensky, Abraham O.: The "mega" syndromes. The common relation of the various manifestations to the autonomic nervous system. *Am. J. Med. Sc.*, 208:602-618, (Nov.) 1944.

\*Type 3 of Bargen represents the form involving the rectum and rectosigmoid. Type 2 involves the remainder of the colon, not the rectum and rectosigmoid.

# Minnesota Academy of Medicine

Meeting of December 13, 1944

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, December 13, 1944. Dinner was served at 7 o'clock and the meeting was called to order at 8:15 by the president, Dr. Walter E. Camp.

There were forty-one members and three guests present.

Minutes of the November meeting were read and approved.

The annual election of officers was held and the following members elected to serve for 1945:

President, Dr. A. G. Schulze, St. Paul

Vice President, Dr. S. E. Sweitzer, Minneapolis

Secretary-Treasurer, Dr. J. A. Lepak, St. Paul

Dr. A. R. Hall read the following Memorial to Dr. Max Hoffman, and a motion was made and carried that this be spread on the minutes of the Academy and a copy sent to the family.

## MAX HOFFMAN, M.D.

1896-1944

Dr. Max Hoffman, a member of the Minnesota Academy of Medicine since 1931, died at Mahtomedi on August 21, 1944, at the age of forty-eight.

Dr. Hoffman was born in Saint Paul on May 4, 1896, the son of Jacob and Esther Hoffman.

He received his early education in the schools of Saint Paul and took his undergraduate medical studies at the University of Minnesota where he received the degrees of M.S., M.B., and M.D., in 1920. As an undergraduate he was elected a member of Sigma Xi. He served his internship at the University Hospital in Minneapolis. Following his internship he was for one year a fellow in Internal Medicine at the Peter Bent Brigham Hospital in Boston. At the end of his fellowship he opened an office in Saint Paul and he maintained an office there until the time of his death. He limited his practice to Internal Medicine but he was particularly interested in endocrinology. For some time he had a laboratory at the Miller Hospital for the study of the sex hormones. During the past two years he had a clinic in endocrinology at the University of Minnesota Medical School. For several years he taught clinical medicine at the Ancker Hospital to students of the University of Minnesota. At the time of his death he was a Clinical Assistant Professor of Medicine at the University of Minnesota.

Besides being a member of the Minnesota Academy of Medicine, he was a member and past president of the Minnesota Society of Internal Medicine. He was a member of the Central Society for Clinical Research, the Minnesota Pathological Society, the American Medical Association, the Minnesota State Medical Association, and the Ramsey County Medical Society.

Dr. Hoffman was recognized as an authority in Internal Medicine. He had many attributes which made him stand out as a doctor. He was absolutely honest in his contacts with his fellow men and in his reporting of his experiences in medicine. He had the ability to evaluate what he read and saw, and he had the will and energy to continue to be a student in medicine. He would have contributed much to the study of medicine had not his untimely death cut him off.

He had been in his usual health until a few days before his death. During these last few days he had experienced slight pain in the chest. This was not severe and did not keep him from his work nor prevent him from playing golf the day before his death. On the evening of his death he dined and spent the evening as the guest of some friends. While with these friends he was seized with severe pain in his chest and asked to be taken to the home of a medical friend who lived near by. He died a short time after arriving at the home of this doctor.

In appreciation of his work, some of his friends and former patients are establishing a fund to be known as the Max H. Hoffman Memorial Fund. This is to be given to the University of Minnesota to establish a Fellowship in Endocrinology to help carry on the work in which he was interested.

Dr. Hoffman is survived by his mother, a brother Edward, and a sister Mrs. Mort Benton.

The Committee:

C. B. DRAKE

H. B. ZIMMERMANN

A. R. HALL, *Chairman*

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The Secretary read a letter to the Executive Committee from Dr. Gustav Schwyzer requesting that his name be placed on the Senior list of the Academy. The Executive Committee approved the transfer and a motion was carried that this be done.

The scientific program followed:

## TUMORS OF THE TRACHEA With Report of Two Cases

KENNETH PHELPS, M.D.  
Minneapolis, Minnesota

The trachea has the completely passive function of serving as a passageway for air between the larynx and the bronchi. It has a simple structure: a membranous tube supported by incomplete cartilaginous rings, lined by mucous membrane and with no functioning muscles.

Tracheal stenosis may be caused by a number of

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different conditions. The most common causes are diseases of the neighboring organs which directly compress the trachea or extend into its walls, for example, thyroid diseases, esophageal diseases, aortic aneurysm, mediastinal tumors, et cetera.

Primary diseases of the trachea are extremely rare. Not much medical attention has been paid to them. When the tracheal lumen becomes diminished, difficulty in breathing and stridor develop simultaneously. If the stenosis develops slowly there may be little difficulty in breathing and the diagnosis is not easily made. Inspiration is frequently more difficult than expiration. The dyspnea may be influenced by the patient's position in that breathing is better lying on one side than on the other or better standing up than lying down.

The two cases I am reporting were recently observed. Each had dyspnea and stridor with no disease of the heart, lungs, or larynx and each had a primary tumor of the trachea.

*Case 1.*—Mr. O. H., aged seventy, was referred by Dr. A. C. Lindberg. He complains of stridor with dyspnea which started one year ago. The symptoms are getting more severe and it is now difficult for him to do the hard work connected with operating his farm. He would feel fine in every respect if he could just breath easier. There is no pain, no loss of weight, no cough, and no fever. He is not hoarse and there is no dysphagia.

Examination of his larynx is negative though a mass can be seen below the glottis, nearly filling the lumen of the trachea. An x-ray film was made by Dr. Russel Morse, who found a round smooth mass attached to the posterior wall of the trachea just below the larynx.

This tumor had the appearance of a benign polyp.

This was confirmed by Dr. Leo Rigler at the University Hospitals who also made laminograms from which slides were made.

A tracheotomy was done below the site of the tumor, under local anesthetic. Through the tube oxygen was given as intravenous pentothal was administered. It was considered safer to do the tracheotomy under novocaine, before giving the pentothal, because an open airway adds to the effectiveness and safety of pentothal. This same technique has been used in thyrotomies for early cancer of the larynx. The mucosa over the tumor was incised and the mass was shelled out with the finger and curette. The consistency was like colloid and there was no bleeding of consequence. The base was electrocoagulated and the mucosa sutured together, leaving a smooth tracheal lumen.

Dr. Bell walked into the operating room as the patient was being wheeled out and reported that the microscopic diagnosis was adenocarcinoma. The tracheotomy tube was removed in twenty-four hours and the patient's symptoms were completely relieved.

Dr. Stenstrom gave x-ray therapy. When last seen the patient had no recurrence of his symptoms.

*Primary cancer of the trachea* is quite rare. In one series of 2,088 tumors of the respiratory tract 748 were in the larynx but only three in the trachea.

It is most common in men (2 to 1) from forty to sixty years old. It is usually in the lower part of the trachea. It develops on the membranous structure and not the cartilaginous portion of the trachea. It develops on the surface and may be nodular or papillary and

may look like a polyp and still be a cancer. Histologically it may be a squamous cell carcinoma but it frequently starts in the mucous glands (adenocarcinoma) and often contains colloid. It rarely metastasizes early.

*Case 2.*—Mrs. Anna K., aged thirty-six, was referred by Dr. Alec McEwan. Her complaint is shortness of breath and stridor of four years' duration. Her symptoms are increasing in severity so it is very difficult for her to walk up a short hill to her home from the street car. The stridor was worse during pregnancy. She feels well generally except for the dyspnea. Physical examination and x-ray of her chest and larynx give negative findings.

Bronchoscopy was done under local anesthesia and a round tumor was found attached to the left wall of the trachea, near its lower extremity. It was smooth in outline and did not bleed profusely when a biopsy was taken. Dr. Bell's diagnosis was benign adenoma.

A few days later the tumor was removed bronoscopically with forceps and followed by electrocoagulation. No recurrence has followed and symptoms are completely relieved.

*Benign adenoma* of the trachea was once considered adenocarcinoma but the absence of metastases and the number of individuals who recovered after removal, resulted in the reclassification of this tumor as benign.

Adenoma occurs in females a little more frequently than in males. It frequently occurs in patients under forty years of age.

The pathological diagnosis of this tumor is not easy from a small biopsy. Sometimes a typical adenoma in section will turn out to be carcinoma, or the reverse.

Anedoma occurs more frequently in the bronchi than in the trachea (as is true of carcinoma also) and may be a very vascular tumor. Hemoptysis may be the first symptom and at times the bleeding may be very severe when a biopsy is done—enough so that a transfusion may be necessary.

Two cases of tumor of trachea are reported both with long standing stridor and dyspnea, without disease of the heart, lungs, or larynx.

### Discussion

DR. D. G. GARDINER, Saint Paul (by invitation): I had talked with Dr. Phelps about certain aspects of this tumor. It was glad to have him bring out the fact that some of these so-called benign tumors may be very vascular. I remember seeing a patient at Ancker Hospital twelve or fifteen years ago. Looking into the trachea I could see nothing on inspiration but when he expired this thing would pop out between the cords and the intern looking on was afraid it might hit him in the face. I knew he had a polyp of the trachea. Under anesthesia, I grasped it and he began to bleed and he bled plenty. I was quite alarmed. I was prepared to do a tracheotomy, which I did, and packed the larynx from below. He still bled. Then I did a fissure and with electrocoagulation sealed off the pedicle. The tumor was about the size of my thumb. Dr. Noble, although usually wanting a pound of flesh, when I gave him that small piece, said it was a vascular fibroma of the trachea. That patient made a very uneventful recovery. It was a very vascular benign pedunculated polyp. I have seen these in children too. One I saw at the Children's Hospital here. The child was cyanotic and dyspneic. In the receiving room

I tried to ascertain the cause. I could see this cystic laryngeal tumor which I merely ruptured and out came a lot of serous material and the child made a very dramatic recovery on the table.

As Dr. Phelps brought out, these things can be very vascular and one has to be prepared to deal with an emergency that might arise from bleeding. But carcinomata are a different story. I have not seen one of the trachea but have seen them in the bronchi. I recall some of my total laryngectomies that I have seen through to a finish. One I recall had a pedunculated carcinoma of the anterior commissure. Until you can get a satisfactory pathological specimen, I don't think you can tell whether they are benign or malignant. The first laryngectomy I did in St. Paul was for carcinoma. The tumor was broad and sessile and extended across the anterior commissure. I made up my mind after a preliminary vision of the thing that I couldn't say unless I did a laryngoscopy. That man is living and well after eight years. (Described the Bell Telephone voice box and his combination of that with the Rochester voice box.)

## ESOPHAGEAL HIATUS HERNIA

JAMES B. CAREY, M.D.  
Minneapolis, Minnesota

Dr. Carey, of Minneapolis, gave a paper on the above subject and showed radiographs of some cases.

### Abstract

The subject of esophageal hiatus hernia was discussed by Dr. Carey on the basis of symptomatology of seven patients, roentgenographic findings of five and gastroscopic observations in two.

The matter's stressed were: similarity of pain to that of peptic ulcer, cholecystitis, particularly with stones, and coronary disease. The time of occurrence, location, radiation, and relation to food are often identical for these conditions and hiatus hernia. One characteristic of hiatus hernia which distinguishes the condition from others, particularly nocturnal angina, is the relief afforded by sitting up in bed or arising and walking about, or by sleeping in a semi-upright position.

### Discussion

DR. O. H. WANGANSTEEN: The terms, para-esophageal and hiatus hernia, frequently are used interchangeably. I am not well enough schooled in the pathology of the condition or adequately experienced in its treatment to know how often each situation exists. From the reports of surgeons who illustrate their techniques for the repair of the condition, one would be led to believe that the most frequent situation is a para-esophageal hernia to the left of the esophagus. There apparently is some reason for controversy over the terminology. Sauerbruch (Deutsche med. Wchnschr., 58:2;1715, 1932) prefers the term para-esophageal hernia; Akerlund believes the designation hiatus hernia suffices to include all types, including the para-esophageal variety (*ibid.* p. 1795). Dr. Carey properly called attention to instances of ampullary dilatation of the lower end of the esophagus, a condition which is occasionally confused with hiatus hernia. Obviously such patients are not candidates for operation. In a previous discussion on

diaphragmatic hernia before this organization (Minnesota Med., 21:290, 1938), I alluded to the controversy which occurred between Sauerbruch and his associates and V. Bergman and Akerlund over this point (Deutsche med. Wchnschr., 58:1391, 1397, 1713, 1794, 1932).

We have latterly been operating upon hiatus hernia by the thoracic approach, resecting the anterior two-thirds of the ninth or tenth rib. It is amazing how much more direct this approach is. It possesses the distinct advantage of bringing the surgeon directly down upon the hernia, the apex of the diaphragmatic cupola. Every surgeon who has repaired such hernias by the abdominal approach is familiar with the difficulty of visualizing the situation from below. Satisfactory exposure as well as illumination of the operative field are difficult to obtain.

Dr. Harrington of Rochester, who has had a large experience with hiatus hernia, has pointed out that it is essentially a sliding hernia of the stomach through or in juxtaposition to the esophageal aperture. In a number of publications, Harrington has pointed out the importance of using autografts of fascia lata as suture material, suggesting that this hernia, like other sliding hernias, is subject to recurrence. In two patients operated upon recently by the thoracic approach, my associate, Dr. R. L. Varco, and I moved the esophagus outward to the left, placing it out toward the left extremity of the diaphragmatic defect. This maneuver permits a satisfactory approximation of the diaphragmatic crura behind and to the right of the diaphragm as well as of the more readily accessible portion of the defect to the left of the esophagus. Such an approximation of the crura of the diaphragm about the esophagus lends the impression that a good repair has been obtained and that a good result reasonably can be expected. Mere suture of the left para-esophageal defect, in many instances, probably fails to deal adequately with the situation, no matter what type of suture material is employed. In other words, displacing the esophagus to the right up against the weak diaphragmatic crura and closing the defect on the left does not constitute a good operation for hernia. This principle of operation in a direct inguinal hernia with a poor quality of muscle tissue would be regarded as poor surgery. It is my feeling that the type of closure described herein meets the requirements of a satisfactory operation for hernia more adequately than does the usual closure of the defect lying to the left of the esophagus. It is my practice to effect the closure of the hernial defect with silk sutures as in any other hernia repair. Granted that the *method* of closure is satisfactory, my impression is that the unabsorbable silk suture will prove just as efficacious in the repair of hiatus hernia as it already has in other difficult hernias.

DR. D. G. GARDINER, Saint Paul (by invitation): I don't think either Dr. Carey or Dr. Wangensteen has indicated what percentage of the patients they have studied have really been ready for surgery. I have seen a large number of these so-called para-esophageal affairs through the esophagoscope, and have operated upon three. What is the indication for surgery in these which show only a little pouching? I have in mind two women who have para-esophageal hernia and most of their distress is due to spasm. They have been fairly well controlled by antispasmodics which have kept them quite comfortable. Unless they are obstructed, where is the borderline and what is the indication for surgery? A lot of people complain of eructations, et cetera. I don't think one case in a hundred requires surgical approach to para-esophageal hernia. I think they can be approached without surgical interference.

DR. E. M. JONES, Saint Paul: I reported a series of diaphragmatic hernias before this society in 1938. A few of the cases in this group were of the esophageal hiatus type. One of these cases is under my care at

## IN MEMORIAM

the present time. When she first came under observation in 1936, we made a diagnosis of an esophageal hiatus hernia. She obtained no relief from the non-operative measures employed, and she was operated upon. The postoperative x-ray study showed that the repair was holding, and her symptoms subsided. She was well for two years, and then she had a recurrence of symptoms. X-ray study showed a recurrence of the hiatus hernia. She came for treatment again a year ago. Her weight at this time had increased to 220 pounds. X-ray investigation showed an ampulla at the lower end of the esophagus and also a small recurrent hiatus hernia. She has improved under medical management, and I hope her improvement is permanent. If, however, she has a recurrence of symptoms in spite of the medical regime, I feel that surgical repair will again have to be undertaken.

DR. CAREY, in closing: The answer to the question concerning indications for operation for patients with hiatus hernia is implicit in the outline of treatment. In other words, if the patient is relieved by simple measures, there is no necessity for operation. These small herniae seldom become incarcerated. Light meals, particularly at night, avoiding constipation or anything which would give rise to increase of intra-abdominal pressure, reduction in weight, and, most important, the semi-upright sleeping position, are the basic therapeutic measures. If the patients are comfortable with this regime, there is no necessity for an operation.

Dr. Stuart Harrington advised that the left diaphragm be paralyzed before operation, and also suggested phrenic exeresis as remedial measures for patients who cannot tolerate operation. Such procedure will diminish the possibility of incarceration of the hernia. Heartburn, eructations, and such minor symptoms arise from irritation of the esophageal mucosa by gastric secretion which collects in the pouch. Bleeding may occur when the hernia becomes incarcerated.

We have examined about twelve of these patients this year and I have seen no reason for operation for any of them. All of them have been relieved of their symptoms caused by the hernia by the measures outlined.

I have not seen spasticity or cardiospasm in relation to esophageal herniae. Most of them are of the ordinary para-esophageal type in which the esophagus is actually more relaxed and patulous than usual. Many of these patients have no symptoms at all; we do not know how many there are because, unless some symptom suggests the necessity for examining the lower esophagus, that condition is not discovered. If hernia is found by routine examination and subsequent questioning reveals none of the cardinal symptoms of esophageal hernia, there is no occasion to do anything about it.

The meeting was adjourned.

ERLING W. HANSEN, M.D.  
*Secretary*

## In Memoriam

### MARION M. HURSH

Dr. Marion M. Hursh of Hibbing, Minnesota, died January 20, 1945 at the age of sixty-seven after a long cardiac illness.

Dr. Hursh was born in Maple Plain, Minnesota, March 8, 1877. He grew up in Henning in Ottertail County. He received his college education at Hamline College, Saint Paul and obtained his M.D. from Hamline Medical College in 1908. He interned at Deaconess Hospital in Minneapolis, and took some post-graduate work at Tulane University.

Dr. Hursh located in Itasca County more than thirty-five years ago, having lived at Grand Rapids for many years and at Cohasset before moving to Hibbing in 1939.

He was a captain in World War I and a member of the American Legion. While living in Cohasset he served as county commissioner for a term. A preacher as well as a physician he ministered to spiritual as well as bodily needs. His obstetrical practice numbered over 3,000 cases.

Dr. Hursh married Anna M. Gooch, a former missionary to Burma. All three sons are physicians. Douglas is a medical missionary in Nigeria, Africa. Lawrence is a major in the armed forces in Luxembourg, while Philip is a lieutenant with the medical corps in the Philippines. Besides his family, Dr. and Mrs. Hursh raised three nieces, one of whom is a prisoner of the Japs in the Philippines.

### CARL HENNING MATTSON

Dr. Carl Henning Mattson was born in Willmar, Minnesota, June 7, 1901, the oldest child of Arvid and Gerda Mattson. When he was small, the family moved to Saint Paul where he attended grade school and Mechanic Arts High School.

He entered the University of Minnesota and received his medical degree in 1930. During his medical school days he worked his way through school, supporting not only himself but his family, as his father was frequently out of work. In spite of that he graduated as an "A" student and was made a member of the Alpha Omega Alpha honorary medical fraternity. He had a year's

(Continued on Page 240)

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internship at Ancker Hospital followed by a year as a resident.

In 1931, he started practice in St. Paul. He was married to Ann Rolig on October 15, 1932. In 1937, he went to Duluth and practiced there for a year and a half, returning to St. Paul in 1939 where he remained until entering the Navy.

He was Chief of Staff of Bethesda Hospital in 1940 and a member of the Board of Directors from 1939 to 1943.

In 1943, he became a member of the American College of Surgeons and in September of the same year he entered the Navy as a Lieutenant Commander.

In May, 1944, he was attached for duty with the U. S. Naval Base Hospital in the Admiralty Islands. In December, 1944, he was attached to the U.S.S. Ozark. When the Luzon push started, he was with the Navy on the Lingayin Gulf, but the mortality was less than anticipated so on January 14, Dr. Mattson was sent to Leyte.

On January 15, he, with nine corpsmen, was to fly back to the Base Hospital on the Admiralty Islands. Five minutes after their plane took off it was crashed into by another plane which sheared the tail off causing it to fall out of control and crash to the ground. All persons in the plane were killed.

He is survived by his wife, Ann, two daughters, Karen, 8, and Ruth 6, his parents and two sisters, Hildur, and Mrs. Leo Kopp of Omaha.

He was one of the finest physicians, a real gentleman. This death is a loss to the profession as a whole and to the Ramsey County Medical Society. He was the first member of the Ramsey County Society to die in this war or the last war.

OLOF I. SOHLBERG, M.D.

### THORVALD PETERSEN

Dr. Thorvald Petersen, a practitioner in Minneapolis since 1913, died January 22, 1945 at the age of sixty-two.

Dr. Petersen was born in Fyn, Denmark, February 24, 1882. Receiving his common school education in Denmark, he came to America and attended college at Danebo College in Tyler, Minnesota, and Grand View College in Des Moines, Iowa. He obtained his M.D. degree at the University of Illinois in Chicago in 1911. After interning at Swedish Hospital, Minneapolis, he practiced four years at Gaylord, Minnesota, until 1914 when he moved to Minneapolis.

Dr. Petersen was a brother of Hjalmar Petersen, former governor of Minnesota. He was a member of the Hennepin County Medical Society, the Minnesota State and American Medical Associations, the Minneapolis Surgical Society and the Masons. Two sons, Captain Robert T. and Lt. Glenn L. Petersen, survive him.

**RALPH WALLACE WARNOCK**

Ralph Wallace Warnock was born at Altona, Illinois, on March 29, 1891, and died suddenly at his home on October 1, 1944. His father, John Fremont Warnock, a railroad man, and mother, Leona Maude Bone, reared him through his grade-school period on a farm at the place of his birth, and in 1907 he graduated from the Altona High School. After this the illness of his sister caused a five-year suspension of all his plans and also influenced him in his decision to study medicine although his parents desired his entry into the ministry, for which he was offered a scholarship by the Christian Church. Accordingly, he prepared himself by entering the Drake University in the Fall of 1913 and graduated in June, 1917. Throughout his college career he distinguished himself in many ways. He attained scholastically most of the highest honors in spite of the handicap of the necessity of working his own way. This did not deter him from engaging successfully in the social and athletic activities of his school. He was Drake's first nine-letter man in football, basketball, and track and was a member of many collegiate societies, notably a charter member of Phi Beta Kappa, all of which served to develop his later life.

He entered the University of Minnesota Medical School in the Fall of 1917. Here again in his very unassuming way he combined his scholastic work with many extracurricular activities to round out to its fullest enjoyment a hard-earned and well-deserved education. In this period World War I, as it did with so many others, found him serving in the Medical Reserve of the Student Army Training Corps. The following Fall he again entered the athletic field and won his letter in football. He was a member of the Nu Sigma Nu Fraternity. He graduated in 1921, following which he served a junior and senior internship of twenty-seven months at the Minneapolis General Hospital. Then in 1922, Dr. Harold Richardson of St. Paul was instrumental in bringing him into the office of the late Dr. Charles Lyman Greene, a nationally and internationally known internist and cardiologist. He was associated with them and also later with Dr. Joseph F. Borg of St. Paul until Dr. Greene's death in 1929. He was married in 1923, shortly after his association with Dr. Greene, to Viola McLain of Des Moines, Iowa.

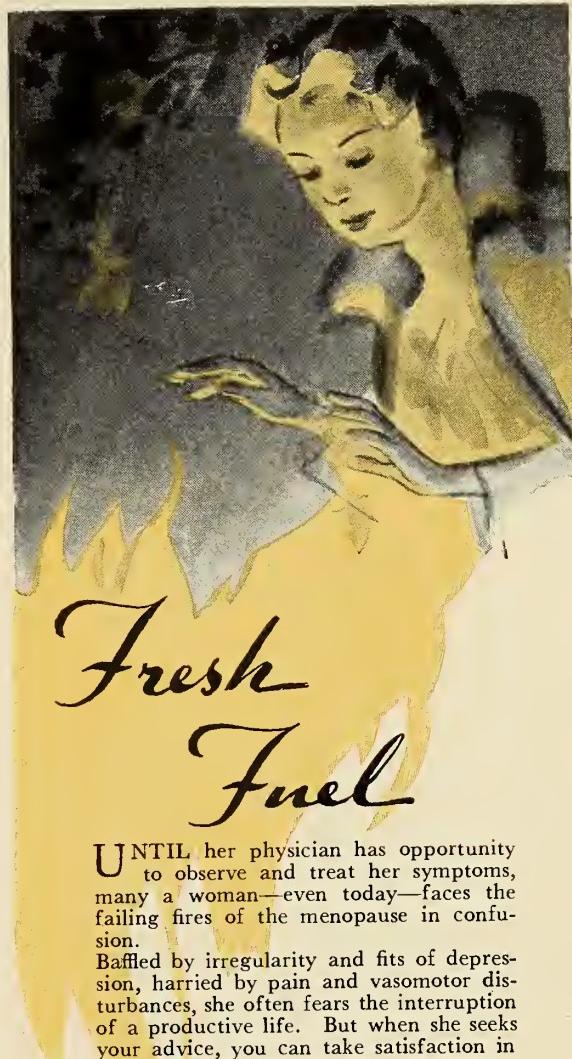
He was a member of the American Medical Association, Minnesota State Medical Association, Ramsey County Medical Society, Minnesota Society of Internal Medicine as well as of the American Therapeutic Society. He was also a diplomate of the American Board of Internal Medicine, clinical instructor in Medicine at the University of Minnesota, and at the time of his death Chief of Staff at St. Luke's Hospital, Saint Paul.

His hobbies were chess, fishing and photography.

His was a self-effacing, unselfish personality, sincere in his work and devoted to his family. Professionally he was well known to all of us for his many attributes —his gentleness, his even-tempered manner, and his deep understanding.

He is survived by his wife and two daughters, Margaret Ann and Jeanne, his mother, Leona Maude Warnock, a sister, Fannie B., and a brother, Carroll.

D. G. GARDINER, M.D.



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Red Wing, Minnesota

### GOODHUE COUNTY

The Goodhue County Medical Auxiliary held a meeting on December 19 in conjunction with the Goodhue County Medical Society. Dinner was served at the St. James Hotel in Red Wing. Following the dinner, meetings were held by both organizations.

On January 11 the regular meeting of the Auxiliary was held at the home of Mrs. W. W. Liffriq. Following a business meeting the afternoon was spent in making dressings for Our Lady of Good Counsel Free Home. Refreshments were served by the hostess.

\* \* \*

A meeting of the Goodhue County Medical Auxiliary was held February 7 at the home of Mrs. R. V. Sherman, Red Wing, Minnesota. Although a small group was present, the afternoon was spent in making dressings for Our Lady of Good Counsel Free Home and the packing of a box of supplies for the Medical and Surgical Supply collection.

Mrs. G. C. Kimmel, president, stressed the importance of the radio programs, "Doctor's Look Ahead," which are presented by the National Broadcasting Company and the American Medical Association.

### MOWER COUNTY

The Woman's Auxiliary of the Mower County Medical Society held a regular meeting in December at the home of Mrs. L. G. Flanagan.

The program of the afternoon was composed of a paper entitled "Public Relations" by Mrs. S. Dale Spotts, an article on postwar planning by Mrs. Rollo K. Packard, given by Mrs. P. A. Lommen, and another article "Accidents—Greatest of All Killers" by Austin E. Smith, given by Mrs. J. G. W. Havens.

Refreshments were served by the hostess during the social hour.

Mrs. W. B. Grise, Mower County Junior Red Cross Chairman, a member of the Auxiliary, was presented with the receipts of the Junior Red Cross membership drive at a ceremony which took place in the Austin High School. Mrs. Grise was a guest instructor representing the Junior Red Cross at a Hi-Y meeting held at the high school. The boys made menu covers and cut duffel bag strings. The members of the Hi-Y club passed a resolution aimed to boost interest in Junior Red Cross work and provide contributions to the program.

\* \* \*

Mrs. L. G. Flanagan presented a paper entitled "Physical Fitness for America" by Morris Fishbein at the

January meeting. Mrs. W. B. Grise was hostess at her home.

During the business session the Auxiliary decided to become members of the co-ordinating council with Mrs. Grise as representative. All were urged to make use of the weekly series of dramatized programs, "Doctor's Look Ahead," by the National Broadcasting Co.

Refreshments were served by the hostess during the social hour.

## REPORTS and ANNOUNCEMENTS

### MEDICAL BROADCAST FOR MARCH

The following radio schedule of talks on medical and dental subjects by William O'Brien, M.D., Director of Postgraduate Medical Education, University of Minnesota, is sponsored by the Minnesota State Medical Association, the Minnesota State Dental Association, the Minnesota Hospital Association and the University of Minnesota School of the Air.

March 3—9:15 A.M.—WCCO	*Industrial Medicine
March 3—11:30 A.M.—WLB-KROC	Medicine in the News
March 7—11:00 A.M.—WLB	Sunlight and Health
March 10—9:15 A.M.—WCCO	*Occupational Diseases
March 10—11:30 A.M.—WLB-KROC	Medicine in the News
March 14—11:00 A.M.—WLB	Healthy Minds and Healthy Bodies
March 17—9:15 A.M.—WCCO	*Health of Women in Industry
March 17—11:30 A.M.—WLB-KROC	Medicine in the News
March 21—11:00 A.M.—WLB	Mental Hygiene
March 24—9:15 A.M.—WCCO	*Control of Contagious Disease in Industry
March 24—11:30 A.M.—WLB-KROC	Medicine in the News
March 26—4:15 P.M.—WCCO	Rest and Sleep
March 28—11:00 A.M.—WLB	Your Hospital in War-time
March 31—9:15 A.M.—WCCO	*Dentistry for the Workers
March 31—11:30 A.M.—WLB-KROC	Medicine in the News

\*Keyed with subject of the month—Minnesota State Medical Association Packet of Information for Members.

### E. STARR JUDD LECTURE

The twelfth E. Starr Judd lecture will be given by Dr. Allen O. Whipple, Professor of Surgery, Columbia University, Tuesday evening, April 10, 1945, at 8:15 in the Museum of Natural History Auditorium, University of Minnesota. The subject will be "The Problem of Portal Hypertension in Relation to Hepato-Splenopathies."

The late E. Starr Judd, an alumnus of the Medical School of the University of Minnesota, established this annual lectureship in Surgery a few years before his death.

### WASHINGTON COUNTY SOCIETY

A joint meeting of the members of the Washington County Medical Society and the Staff of the Lake View Memorial Hospital in Stillwater, was held February 13, 1945.

Francis W. Lynch, M.D., of Saint Paul, the guest speaker, gave a lecture on "Common Dermatologic Conditions" which was profusely illustrated. An hour well spent in looking and listening.

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**REFERENCES** — 1 West. J. Surg. & Gyn., 51:150, April, 1943. 2 Clin. Med. & Surg., 46:327, August, 1939. 3 Med. Rec., 155: 316, 1942. 4 Crossen, H.S. and R. J.: Diseases of Women, C. V. Mosby Co., St. Louis, 9th ed., 1941.

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## ◆ Of General Interest ◆

Dr. O. C. Braun was appointed health officer for Nashwauk at the meeting of the village council on January 19.

\* \* \*

Dr. L. E. Prickman, Mayo Clinic, presented a motion picture entitled "Functional Dyspnea" at the Forum on Allergy held in Pittsburgh on January 29.

\* \* \*

Dr. P. C. Petersen, of Braham, has purchased the practice of the late Dr. A. A. Peterson in Mora and will maintain offices in both places.

\* \* \*

Dr. L. A. Veranth, St. Cloud, has moved into his new offices in the building which he purchased several months ago and which has been remodeled into a completely modern structure.

\* \* \*

Dr. John T. Leland, formerly of Herman, Minnesota, is now located at 3 Madrona Street, Mill Valley, California. Dr. Leland is on the staff of the Marine Ships Hospital, Sausalito, California.

\* \* \*

Dr. H. O. McPheeters, Minneapolis, was guest speaker at the regular monthly meeting of the Brooklyn Surgical Society on February 1. Dr. McPheeters' sub-

ject was "Sapheno-Phemoral Ligation, with the Immediate Retrograde Sclerosing Injections." Dr. McPheeters read the same paper before the Los Angeles Surgical Society on February 9.

\* \* \*

Dr. R. C. Radabaugh of Hastings attended the General Surgical Course of the Cook County Postgraduate School of Medicine and Surgery in Chicago in the month of November.

\* \* \*

Dr. Charles R. Drake, Minneapolis, was elected president of the Minnesota School Board Association at its business session which replaced the annual convention at the Hotel Lowry, Saint Paul, February 7, 1945.

\* \* \*

Dr. C. A. Van Slyke, a member of the board of directors of Swift County Hospital, Benson, was re-elected treasurer of the hospital at the annual meeting of the Hospital Association.

\* \* \*

Dr. H. I. Lillie, of the Mayo Clinic, was the presiding officer at the Council Meeting of the American Laryngological Association in New York City. While in New York Dr. Lillie also attended a number of surgical clinics.

(Continued on Page 246)

*In Estrogen Therapy  
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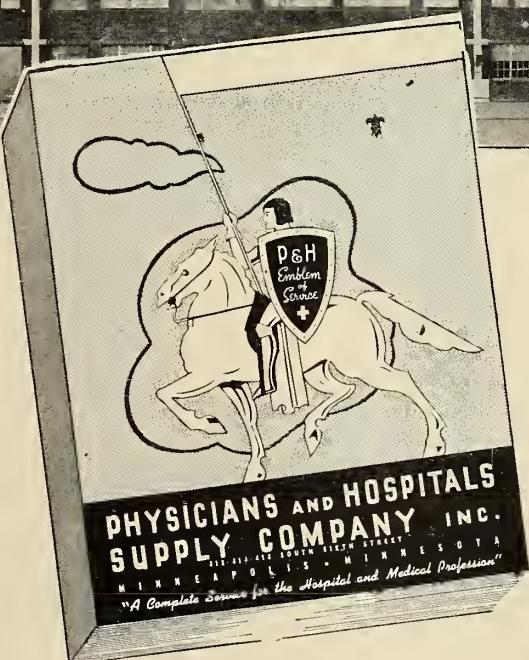
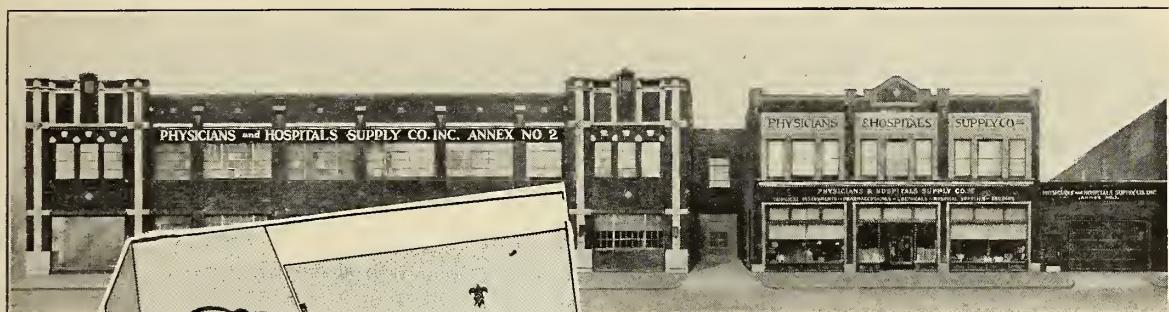
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The following officers were elected at the annual staff meeting of St. Barnabas Hospital, Minneapolis: Dr. Carl O. Rice, chief of staff; Dr. James S. Reynolds, vice chairman; Dr. H. F. Bayard, secretary-treasurer. Dr. H. D. Diessner was made a member of the executive committee.

\* \* \*

Dr. D. R. Nichols, Mayo Clinic, recently attended a conference in Washington, D. C., of a group interested in the prolongation of the action of penicillin. The meeting was held under the direction of the Committee on Chemotherapeutics and Other Agents of the National Research Council.

\* \* \*

Dr. Kenneth Kelley, Minneapolis, will open offices in Menahga some time in April. A graduate of the Minnesota University Medical School, Dr. Kelly interned at the Swedish Hospital in Minneapolis in 1944 and will complete his residency there in the spring.

\* \* \*

Dr. R. K. Ghormley, Mayo Clinic, assisted with the examinations at the meeting of the American Board of Orthopedic Surgery in Chicago. While there Dr. Ghormley also attended a meeting of the Postgraduate Committee on Orthopedic Training, of which he is chairman.

\* \* \*

Captain James Eckman, who is on leave from the Division of Publications, Mayo Clinic, and is now serving in the Medical Intelligence Division, Preventive Medicine Service Office of the Surgeon General, United States Army, has been elected to the Medieval Academy of America.

\* \* \*

Dr. Milo P. Gerber was elected chief of staff of St. Joseph's Hospital, Brainerd, at the annual dinner meeting. Dr. O. E. Hubbard was made vice chief and Dr. V. E. Swanstrom, secretary-treasurer.

Guest speakers at the meeting were Dr. M. G. Gillespie and Dr. F. J. Hirschboeck, both of Duluth.

\* \* \*

Dr. J. A. Bargen, Rochester, delivered the annual Beaumont Lecture in Detroit, Michigan, on February 12. While away, Dr. Bargen also addressed the faculty of Southwestern University and the Dallas Medical Society, in Dallas, Texas, and the faculty of the Medical School of the University of Texas at Galveston.

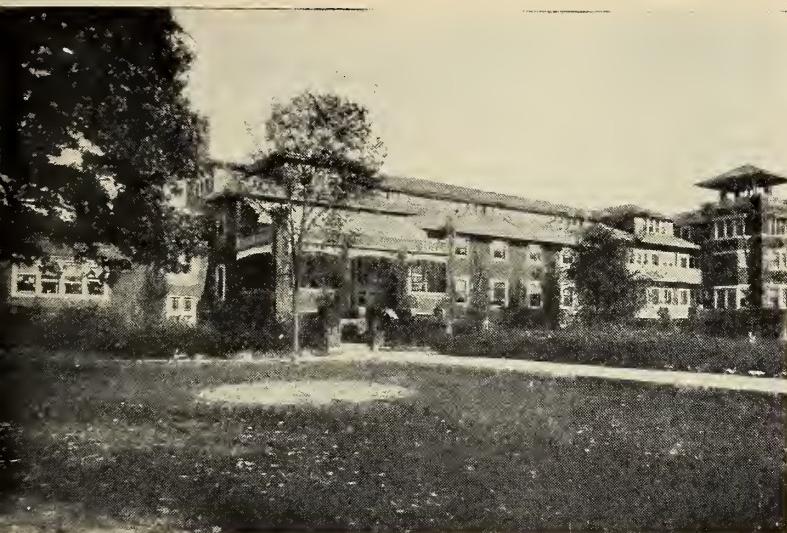
\* \* \*

Dr. A. G. Giroux, formerly of Taylors Falls, is now practicing in North Mankato, where he is associated with Dr. H. J. Nilson. A graduate of the University of Montreal Medical School, Dr. Giroux has been practicing for the past twenty-five years and before going to Taylors Falls lived in Duluth and at Moose Lake.

\* \* \*

Dr. A. F. Kemp was elected president of the Blue Earth County Medical Society at their meeting in Mankato on January 31. The new vice president is Dr. P. G. Hooper, and Dr. A. A. Schmitz is secretary-treasurer. After the business meeting and general dis-

(Continued on Page 248)



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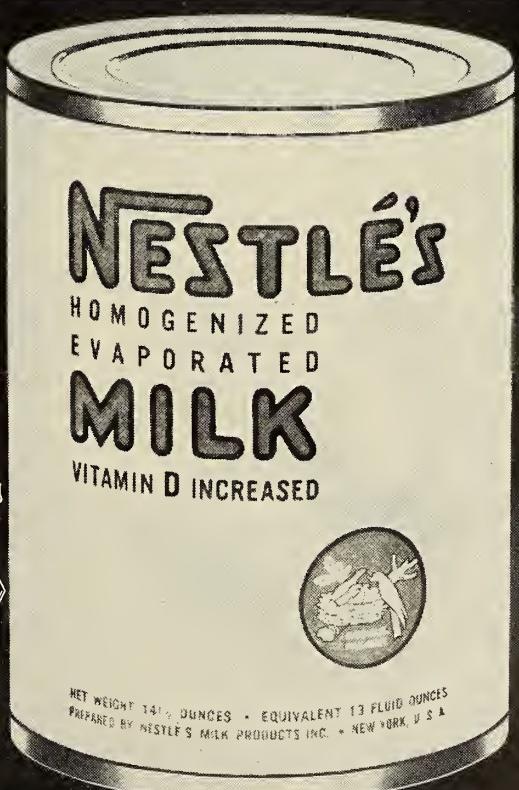
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## OF GENERAL INTEREST

cussion, members of the society were the guests of the new officers at a stag luncheon.

\* \* \*

Captain George Berryman, Sn. C., formerly a fellow in physiologic chemistry at the Mayo Foundation, is now commanding officer at the Medical Nutrition Laboratory in Chicago. Previously the laboratory was included in the Army Medical School at Washington, D. C. When a new building now under construction in Chicago has been completed, the laboratory will also engage in physiologic, chemical and bacteriologic studies.

\* \* \*

The advisory board of St. Joseph's Hospital, Saint Paul, elected Dr. H. R. Tregilgas chief of staff for 1945. The retiring chief of staff is Dr. Max Alberts.

Dr. Tregilgas, who is a resident of South Saint Paul, has been a member of St. Joseph's staff for a number of years and has served on the advisory board for the past five years.

\* \* \*

Captain James Eckman, on leave from the Division of Publications, Mayo Clinic, was guest speaker at the February 19 meeting of the Johns Hopkins History Club. His subject was "Jerome Cardan, Italian Physician and Mathematician of the Sixteenth Century." Captain Eckman is attached to the Office of the Surgeon General, United States Army.

\* \* \*

Captain Waltman Walters, who has recently returned from a tour of duty in the South Pacific area, has been

appointed chief of surgery for the U. S. Naval Hospital at Philadelphia. In recognition of this appointment a biographical article about Captain Walters was published in *Sky-lines*, the news bulletin of the U. S. Naval Hospital at Philadelphia, for January 31, 1945.

\* \* \*

Dr. O. L. McHaffie was elected chief of staff of St. Luke's Hospital, Duluth, succeeding Dr. L. L. Merriaman, at the annual staff meeting the middle of January. Dr. A. C. Hilding is chief of staff-elect, and the executive committee includes Drs. W. A. Coventry, C. O. Kohlbry, Archie Olson, A. J. Wells, P. G. Bowman, F. H. Magney, A. L. Abrahams, and Selma Mueller.

\* \* \*

Continuance of the Pequot Lakes Maternity Hospital, threatened with closing because of rapidly-mounting expenses with no appreciable increase in revenues, now seems assured. Dr. T. E. Eyres has agreed to furnish the building with heat, light, water, electricity, and supplies, and the local Commercial Club and other organizations will help pay the salary of a superintendent.

\* \* \*

Dr. J. R. McNutt succeeded Dr. Richard Bardon as chief of staff of St. Mary's Hospital, Duluth, February 1. Dr. J. E. Power was named as Dr. McNutt's successor for 1946. Other officers elected were Dr. K. R. Fawcett, secretary; Dr. F. J. Elias, chief of surgery; Dr. R. E. Nutting, chief of pediatrics; Dr.

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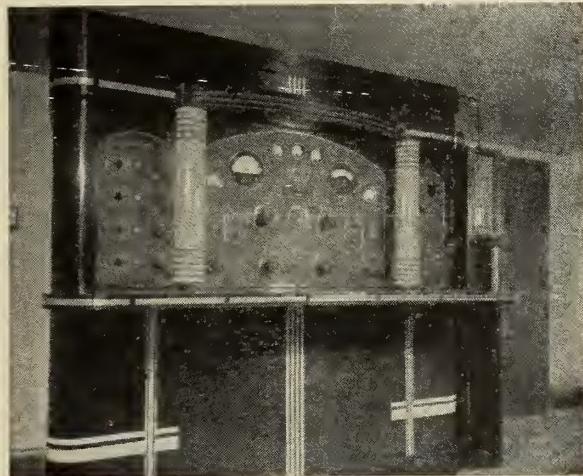
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Drs. F. J. Hirschboeck, chief of medicine, W. E. Hatch, chief of urology, F. N. Knapp, chief of eye, ear, nose and throat, S. S. Houkom, chief of orthopedics, and E. L. Touhy, chief of laboratories, continue in office.

Dr. Ralph Knight, associate professor of surgery and anesthesia, University of Minnesota, was the guest speaker at the dinner which preceded the business meeting.

\* \* \*

Hennepin County Medical Society elected Dr. Orwood J. Campbell president at their recent meeting for the election of officers. Other officers elected were Dr. L. R. Boies, first vice president; Dr. R. S. Ylvisaker, second vice president; Dr. C. D. Creely and Dr. R. W. Morse, board of directors; Dr. A. H. McFarland and Dr. F. R. Hirschfield, board of censors; Dr. J. A. Johnson and Dr. C. A. McKinlay, board of ethics; and Dr. T. J. Kinsella and Dr. T. A. Peppard, board of trustees.

Drs. E. S. Platou, S. H. Baxter, C. A. McKinlay, C. A. Borman, and L. A. Lang were named delegates to the Minnesota State Medical Association.

In his address at the twenty-third annual foundation dinner of the Minneapolis Surgical Society on February 2, at the Radisson Hotel, Dr. Arthur Wilburn, Harvard Medical School, explained his technique for the construction of new bile ducts from pieces of intestines in cases where he has found it necessary to replace ducts destroyed by cancer or inflammation. Dr. Wilburn, who is lecturer on surgery at Harvard and chief of the surgical service at Massachusetts General Hospital in Boston, has performed eight such operations and all have been successful.

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# Communications

Overseas  
January 30, 1945

Dear Dr. Jones:

It's been a long time since I have written; my apologies for such neglect. It seems this war is a continuous process of either feverishly preparing for an operation or being in the middle of one. Neither period seems conducive to letter writing.

Then censorship forbids telling of interesting things that happen, so one ends up, it seems, with not a good letter.

This present operation seemed to take an interminably long time, yet it wasn't quite as rugged as the Attu operation. For the first time we were subjected to strafing and bombing raids to include a paratroop attack, so all in all it had its moments.

The natives here are poor beyond description. Clothing is a critical item with them. Apparently this area has always been dependent on the importation of cotton and when the Japs took over, they commandeered all cotton cloth. The natives say they haven't been able to get a piece of cotton cloth for two years, so you can imagine what sort of tattered brief clothing they have to wear. The majority haven't worn shoes for two years.

From talks with the natives I get the impression that the Japs robbed and abused them to the full extent. Any newspaper stories coming out of this area regarding Jap atrocities are more than true. It is hard to understand why those stories are apparently minimized to the people back home.

One thing the Japs have succeeded in doing here is to build up a terrible hatred against the Japanese which the Filipino will carry with him for a long time to come.

On the many occasions when we are able to take Jap prisoners, we have to protect them from the natives.

In talking to some of the Filipino leaders I get the impression that they will never dare accept independence. Because of their strategic location and their natural resources, they will always fear China and Japan and probably their best bet is the benevolent protection of Uncle Sam.

In general, the outlook for the war's end in this theater gets better daily. I would guess from here that it could end six to twelve months after termination of the European War.

In general, the morale of doctors in field units is not too good. On the average, it is going on three years that they have been out of touch with any sort of medicine. They wonder what is to become of them after the war. Will there be residencies or an opportunity for them to take work in teaching hospitals. On the salary of a Captain, a doctor cannot save enough to allow him to spend much time in further study when he gets back.

In this war the hero doctor is the battalion surgeon; perhaps not because he saves lives in the front lines, but because he is continually exposed to danger and because his presence in the front lines supports the morale of the troops; the soldier knows someone will take care of him if he is hit.

I can well imagine you are worked to death around there. Sure wish I could be with you, feel I'm missing a lot of learning.

## COMMUNICATIONS

At present I am a Division Surgeon which means my duties are largely administrative and you might say preventive medicine.

Occasionally I get MINNESOTA MEDICINE and it is with a great deal of pleasure I read your "President's Letter." They are excellent. Congratulations on being President, and congratulations on the "letters." I point with pride to these "President's Letters" for the benefit of the medical officers around here.

At least you can't say I never write, say almost never. I say again I shall try to do better in the future.

Sincerely,

BYRON B. COCHRANE

Dr. Byron B. Cochrane interned at the Miller Hospital, Saint Paul, and practiced in Saint Paul before entering the service. He is now a Lieut. Colonel and Division Surgeon at the age of thirty-three.—EDITOR.

Somewhere in Italy  
January 20, 1945

Dear Dr. Roberston and Fellow Members of the Mower County Medical Society:

A 1945 membership card for the Minnesota State Medical Association and the Mower County Medical Society just arrived with my name on it. I believe that I owe thanks to you members of the society who are still carrying on at home. That's a mighty fine thing for you gentlemen to do and believe me your efforts are appreciated on this end of the line.

It will not be too many months from now before one year will have been spent on foreign soil. Am not permitted to mention exact dates.

The place where I am at did have two doctors at-

tached but recently the other man returned to the States so I have the work alone. It isn't difficult and can easily manage. The civilians have a hard time getting medical attention and a much more difficult time getting medicines. Many of them come out here for treatment and we are allowed to use our discretion as to how many to handle. If one did not have some limitations he could be doing a land office business on civilians alone. We never turn down any emergencies. Every once in a while someone will come in there with the name of some drug and wants medicine for someone in some nearby town and of course there is no dice with a deal of that sort. If you give them a chance they will take advantage of you for all that you have and then grumble because you ran out of supplies. Not all are that way, however. Many of them, in order to show their appreciation for what has been done, will invite you to their homes for a meal and that really is the payoff. It takes some fast talking to get out of going on these invitations. It is the better families that extend such offers and they do have nice homes but the sanitation is not quite up to where one would enjoy sitting down and partaking of their victuals. When you go to a place of that sort the meal lasts for about two hours. I can sling enough of the linguo plus the use of the hands to convey a few ideas so can get along fairly well. Wine seems to be a must with every meal, and when you do eat out you make it a point to drink the wine in hopes it will cancel out some of the bugs that are in the other food.

There is a considerable amount of flying connected with my work and so far have been over practically the entire country. I have been flying as copilot for nearly six months. More than once it would have been a lot more pleasant to have been on the ground.

The weather here is very much on the damp side with rain nearly each day. There is a lot of snow on the mountains, but none at this place.



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Penicillin Schenley for which we are the distributors in this territory, is supplied in 25 c.c. rubber diaphragm capped vials containing 100,000 Oxford units.

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**GYNECOLOGY**—Two-week Intensive Course, April 23, June 18. One-week Personal Course in Vaginal Approach to Pelvic Surgery, April 2, May 21.

**OBSTETRICS**—Two-week Intensive Course, April 9, June 4.

**ANESTHESIA**—Two-week Course in Regional, Intravenous and Caudal Anesthesia.

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The food situation for Army personnel is good considering the problem of transportation. C rations hit the table for many of the meals and that is one item that will definitely be off the list for keeps when this is over and Spam is a long way from being appetizing to the hungry eye. On at least one occasion and often two during each week we have either steak, beef roast (if the meat is too tough to fry) and chicken. Naturally when these meals come along there is a complete sell out from the kitchen. Occasionally we also get ice cream and that always is a treat even though it is made from canned milk. We get from five to six packages of cigarettes per week, one cigar, two bottles of coke and three beers. There always are at least three candy bars per week, and one package of gum.

Thanks again to all of you for being so kind to take care of my membership in the society.

With best wishes,  
CARL L. ECKHARDT, Captain, MC

Netherlands East Indies  
9 February 45

Dear Dr. Oulette:

It may be of interest to you as to what duties the many pediatricians who are temporarily in the Army perform. My chief of medical service is a pediatrician, one pediatrician is doing dermatology, one was a dispensary officer, one cares for communicable diseases. As unlikely as it may seem that pediatricians are of value to the Army, all of those I know have very excellently filled an important position. The only field into which none have entered has been surgery.

Probably of some interest to you will be some description of General Hospitals overseas. The one I command is much like all others and is almost completely housed under canvas. It is a little larger than usual in that we are able to take care of more than two thousand patients, and at times have been filled. Other than the psychoneurotic wards, surgery, x-ray and clinics, which are made of prefabricated tropical type buildings, nothing here is permanent. A large amount of the construction is carried on by our own troops, supervised by our officers. I am sure that many of them, when they return to civil life, will continue to carry with them the building, plumbing, electrical wiring urge. They will have learned the cruder crafts to pass any idle moments that practice will permit them. It is surprising to me that during times of construction and setting up of a hospital these officers are happier than when only doing professional work. I think the fever of it all infuses their blood streams. All types of cases are given definitive treatment overseas unless in some rare case the facilities do not exist. An amazing thing is that despite the inconveniences of a temporary hospital the mortality rate is well below .05 per cent. The hospitals of this type are usually established for not more than six months before they move forward to areas more recently subjugated. They are, however, never very near to the scene of battle.

The immediate surroundings here appear very much like the pictures seen in tourist advertisements for the South Seas. The only quality lacking is civilization. We shall all be quite glad to see towns and cities again even though they may not be in our own country.

I greatly appreciate all that you have done for my children and trust that once the war is over and I again return to the United States I may have the pleasure of making your personal acquaintance.

Kindest personal regards,

V. R. HIRSCHMANN, Lt. Col., MC

MINNESOTA MEDICINE

## BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

**CONTROL OF PAIN IN CHILDBIRTH.** Clifford B. Lull, M.D., F.A.C.S., Clinical Professor of Obstetrics, Jefferson Medical College, Assistant Director Philadelphia Lying-In Unit, Pennsylvania Hospital; and Robert A. Hingson, M.D., Surgeon, United States Public Health Service, Director Postgraduate Medical Course, Philadelphia Lying-In Unit, Pennsylvania Hospital. Introduction by Norris W. Vaux, M.D., Obstetrician in Chief, Philadelphia Lying-In Unit, Pennsylvania Hospital. 356 pages. Illus. Price, \$7.50 cloth. Philadelphia: J. B. Lippincott Co., 1944.

**A TEXTBOOK ON PATHOLOGY OF LABOR, THE PUERPERIUM AND THE NEWBORN.** Charles O. McCormick, A.B., M.D., F.A.C.S. Clinical Professor of Obstetrics, Indiana University School of Medicine; Consulting Obstetrician of William H. Coleman Hospital for Women, Indianapolis City Hospital and Sunny Side Sanitarium. 399 pages. Illus. Price, \$7.50, cloth. St. Louis: C. V. Mosby Co., 1944.

**THE ABORTION PROBLEM.** Proceedings of Conference held under the Auspices of the National Committee on Maternal Health, Inc., at New York Academy of Medicine, June 19 and 20, 1942. Howard C. Taylor, Jr., M.D., Conference Chairman. 182 pages. Baltimore: Williams & Wilkins Co., 1944.

**ARTERIAL HYPERTENSION—ITS DIAGNOSIS AND TREATMENT.** Irvine H. Page, M.D., and Arthur Curtis Corcoran, M.D. Research Division of the Cleveland Clinic Foundation, Cleveland; formerly Lilly Laboratory for Clinical Research, Indianapolis City Hospital, Indianapolis. 352 pages. Illus. Price, \$3.75, cloth. Chicago: Year Book Publishers, 1945.

**THE MARIHUANA PROBLEM IN THE CITY OF NEW YORK.** Sociological, Medical, Psychological and Pharmacological Studies. Mayor's Committee on Marihuana. 220 pages. Illus. Price, \$2.50, cloth. Lancaster, Pa.: Jaques Cattell Press, 1944.

**APPROVED LABORATORY TECHNIC.** Clinical Pathological, Bacteriological, Mycological, Virological, Parasitological, Serological, Biochemical and Histological. Fourth Edition. John A. Kolmer, M.S., M.D., Dr.Ph., Sc.D., LL.D., L.H.D., F.A.C.P. Professor of Medicine in the School of Medicine and the School of Dentistry, Temple University; Director of the Research Institute of Cutaneous Medicine; formerly Professor of Pathology and Bacteriology, Graduate School of Medicine, University of Pennsylvania; and Fred Boerner, V. M. D. Associate Professor of Clinical Bacteriology, Graduate School of Medicine and Assistant Professor of Bacteriology, School of Medicine, University of Pennsylvania; Bacteriologist, Graduate Hospital, Philadelphia. 1017 pages. Illus. Price, \$10.00, cloth. New York: D. Appleton-Century Co., 1945.

**GYNECOLOGICAL AND OBSTETRICAL UROLOGY.** Houston S. Everett, M.D., Associate Professor of Gynecology, Johns Hopkins University. Baltimore: 517 pages. Illus. Price \$6.00. Williams & Wilkins Co., 1944.

This volume of 500 pages is a complete compilation of all the various urological conditions found in women with or without concomitant gynecologic and obstetrical

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conditions. All obstetricians and gynecologists know that their patients often have urologic complications which must be treated, and many times urologic disease and symptoms must be differentiated from pelvic disease. In this volume they can find a discussion of all such conditions, the author's extensive experience in the special urologic clinic of the gynecology department at the Johns Hopkins Hospital being the prime source of his experience. He includes a chapter on the use of the Kelly direct vision cystoscope which is used in that clinic.

Among the surgical procedures described and illustrated are operations for vesical, ureteral and urethral fistulae, operations for incontinence, transplantation of ureters, ureteral strictures and hydronephrosis, congenital anomalies, tumors and nephropexy. Most of these procedures are well illustrated.

Infections of the urinary tract are well discussed along with methods of treatment, including recent developments in chemotherapy.

This is a compact and complete discussion of urology as it pertains to female patients. It should be a very useful text for gynecologists and obstetricians as well as general practitioners and students.

SELMA C. MUELLER, M.D.

**MEDICAL USES OF SOAP.** Edited by Morris Fishbein, M.D. A Symposium. The authors: G. Thomas Halberstadt, B.S.Ch.E., C. Guy Lane, M.D., Daniel J. Kooyman, Ph.D., Marion B. Sulzberger, M.D., Rudolf L. Baer, M.D., Theodore Cornbleet, M.D., Carey McCord, M.D., Lester Hollander, M.D., Morris Fishbein, M.D., Irvin H. Blank, Ph.D. 182 pages. 41 illus. Price, \$3.00, cloth. Philadelphia: J. B. Lippincott Company, 1945.

The authors have presented their own views, with disregard for duplication. The repetition adds clarity and impressiveness. This treatise presents SOAP in such an entirety, that one becomes soap-conscious as never before.

The subject matter includes: Soap Technology, Usual or Normal Effects of Soap on The "Normal" Skin, Unusual or Abnormal Effects of Soap on the "Normal" Skin, The Effects of Soap on the Abnormal or Diseased Skin, The Effects of Soap on the Hair, Soaps for Industry and the Industrial Worker, Soap for Shaving, Cutaneous Detergents Other than Soap, and The Medical Uses of Soap. It offers a further challenge, among other fields, to research in: allergy; detergency, relative to the bacteriology of staphylococci, typhoid bacilli, and colon bacilli; detergency in surgical technique, especially relative to hypersensitivity or allergy; the field of rosin substitutes in summer camp dermatitis therapy, in view of the shortage of available supply of such needed soap; and to the establishment of a specialty of Detergent Medicine with Certification by The American Board of Dergists.

This collection of articles is timely and the book is a splendid chemical, physical, industrial, and clinical presentation. May the second edition soon appear with condensation of the present material and with added chapters in the further research. It will be awaited with interest. Congratulations to the editor and the authors.

LILLIAN L. NYE, M.D.

# Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

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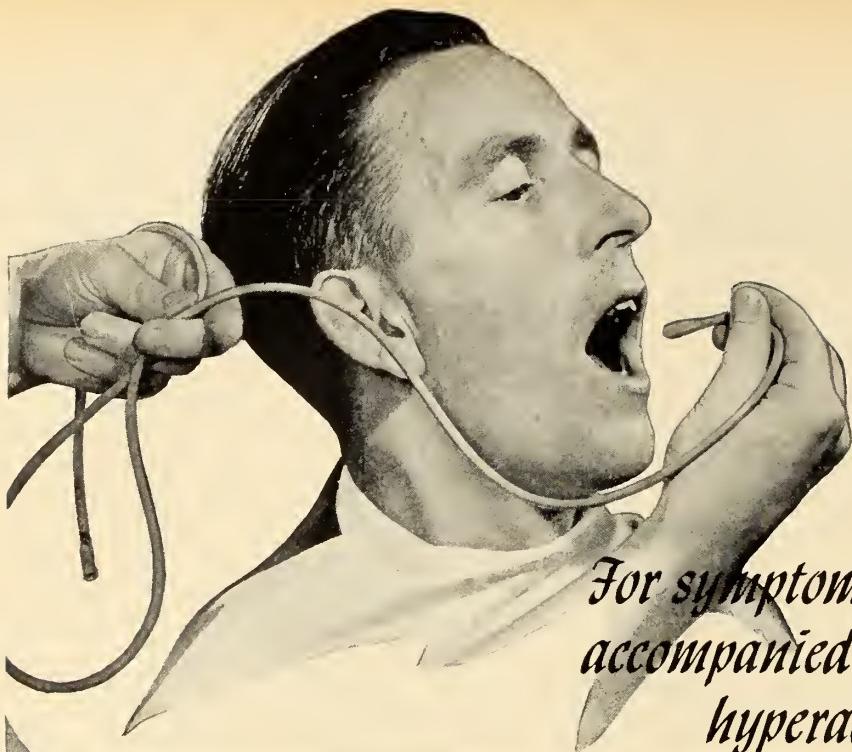
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# Minnesota Medicine

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Volume 28

April, 1945

No. 4

## POSTWAR MEDICINE IN MINNESOTA—THE DOCTOR

BYRON O. MORK, JR., M.D.  
Worthington, Minnesota

I DO not need to remind you that changes are taking place in the practice of medicine; changes which must be reckoned with in any postwar planning. The tremendous progress made by medicine in recent years, which, according to an estimate of a large life insurance company, has resulted in a salvage of a million human lives in one year, also requires greatly increased facilities to make this kind of care possible. No longer can the physician practice good medicine with only his own faculties, however important these are. Readily available aids in diagnosis and treatment are essential—hospitals, laboratory, x-ray and other diagnostic and therapeutic equipment requiring much capital investment. This fact, together with economic changes, population shifts, weather and moisture conditions and other factors, has caused a heavy migration of doctors from rural areas into more populous centers; a trend which will increase in the postwar period according to present indications. From our Southwestern Minnesota Society, comprising six counties, with a membership of forty, five physicians have moved into more urban areas within a little over a year, in addition to those who have been removed by death or who have entered military service. While this is higher than other areas in Minnesota, according to a recent survey, it is in keeping with general trends over the nation as a whole.

### Farm Groups Interested

The problem of providing adequate medical care in rural areas is recognized as acute by the Farm Bureau and other farm groups as well as governmental agencies, and methods are being proposed to overcome it. It is well known that much of the agitation for greater governmental control of medical practice results from this supposed lack of adequate medical care in large sections of rural areas. I was surprised to find that so much is being done by other than government groups along this line. The Farm Foundation held a three-day conference of representatives of farm organizations, physicians and hospital groups and others in April, 1944, proceedings of which are summarized in the book, "Medical Care and Health Services for Rural People." A Study on Postwar Agricultural problems in Minnesota, prepared by the staff of the Department of Agriculture of the University of Minnesota, has a considerable section devoted to health matters. These and other studies have been the source of some of the material for this talk.

If these outside agencies are showing so much interest in this matter, we, as physicians, must recognize the problem, and in our county medical organizations, discuss ways of meeting it. We may say our days are too full to take time for such things, or that in our particular area, there is no problem, so why concern ourselves. I am sure, on deeper thought, we will all realize that we owe it to ourselves, to our colleagues now in the service of our country, and to the public in

Part of symposium on Postwar Medicine in Minnesota presented at the annual County Officers' meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, February 24, 1945.

## POSTWAR MEDICINE IN MINNESOTA—MORK

general to provide the means by which our present effective method of medical care, the finest ever developed anywhere, may continue to be available to everyone, everywhere. If we do not do so, other agencies less well qualified are waiting to take over.

I do not have any "quick cure" to propose, but should like to present a few suggestions—many of which have come from others both in the profession and outside of it who are interested in this problem, with the hope that these may form a basis for further thought and discussion from which some solution to these problems may be found. We must be ready to co-operate, not only with outside organizations, but also among ourselves. We rural practitioners must be ready and willing to make certain changes to help new men get started—to meet them half way at least; and those located in larger centers must be charitable with us "country doctors" and all our shortcomings—remembering that some of our errors in diagnosis and treatment may result from lack of equipment as well as lack of intelligence.

*1. Public Education.*—We, as physicians, especially in rural areas, should discuss the problem with others whenever possible. Leaders of farm groups and organizations are interested in providing better medical care and will gladly work with medical groups, if we show them we are interested. Co-operation by the general public in making the best use of facilities, will result from a thorough understanding by them of the benefits of preventive as well as curative practices. Many of the suggestions to follow will be more effective if the public is interested and understands that co-operation between it and physicians is beneficial.

*2. Providing Facilities.*—Lack of adequate facilities, so essential to giving the kind of care we desire, discourages many physicians from practicing in rural areas. Medical students are trained in well-equipped hospitals, taught to use many types of diagnostic and therapeutic equipment. They do not want to locate in areas where these are not available; yet often they are unable to provide them for themselves. Community or other well-run hospitals, strategically located, properly staffed and equipped and providing a maximum of facilities for all reputable physicians in the area are essential. Adequate consultation

service should be arranged wherever possible. Diagnostic centers, groups, or even community-owned diagnostic equipment may provide further incentive where necessary. As far as possible, in my opinion, these should be controlled and financed by the local community or area served, with a minimum of control from more distant governmental units. Present high income tax rates, for those in higher income brackets, encourage gifts to community projects of this type, and our societies would do well to consider establishment of such facilities on a community basis wherever need for such exists.

Where community-owned facilities do not seem feasible, as in some areas where facilities are already to be found, all physicians should co-operate to make them available to other reputable physicians in the area. There are many groups or clinics located in centers in rural areas. It is the opinion of the men in the group that I am connected with that we have a responsibility to share our hospital and diagnostic equipment and co-operate as far as possible with neighboring physicians. Well-located groups or clinics can contribute much to the medical practice in the whole area they serve, to the mutual advantage of both the group and the other physicians, as well as to the public.

*3. Public Health.*—Extension of public health facilities, through establishment of centers with trained physicians and nurses at points geographically located to cover all parts of the state, will certainly encourage physicians to locate in smaller communities. The excellent diagnostic aids already provided by our efficient Minnesota Department of Health, will be brought even closer, and supervision of immunizations, control of contagious diseases and other public health matters by those well trained in such things will remove many worries from the mind of the small town practitioner and give him more time to concentrate on other problems. The Minnesota State Planning Board and the United States Public Health Service have recommended the establishment of such district health units, and our State Board of Health has been working on this program for some time.

*4. Changes in Medical Education.*—One plan that has been proposed to provide more doctors for rural areas has been a return to the old pre-

ceptor system, whereby senior medical students would be sent out for periods of practice with rural practitioners. This would give the students experience in general practice and also acquaint them with the type of medicine practiced and facilities available in the smaller communities, and, if these are maintained at a high level, might well encourage them to return to these communities to practice after graduation. Such an arrangement has been tried in the Cadet Nurse Training Program, and has been found valuable. Medical School administrators are considering this, and other methods of giving better training to students to fit them for general practice in rural areas, and undoubtedly would welcome any suggestions from county medical societies or individual practitioners to improve the situation. Perhaps some kind of training of two or more physicians to go out as a team or group could be worked out wherever it might be feasible. Increased postgraduate study facilities, such as are being provided through the Center for Continuation Study at our University, are of great benefit, especially if arrangements can be made to let doctors in smaller areas get away to attend, knowing that their practice would be taken care of. Perhaps through county medical societies, we can work out schemes whereby every doctor can occasionally attend medical meetings and postgraduate courses, other doctors taking turns at covering the work.

One thing we all can do is to encourage more young people from rural areas to enter medical schools. While no accurate figures are available from our own University, the dean's office feels that the number of students entering from rural areas is decreasing. Farm organizations are considering working out some form of scholarships or other aid for worthy students, perhaps with the provision that they spend a certain number of years practicing in the area concerned. We, as county medical societies, might do well to work with them or to establish our own scholarships or loan funds for this purpose.

*5. Economic Factors.*—Last, but by no means least, improvement in general economic conditions will go far toward encouraging wider distribution of physicians. The interim report from the Subcommittee on Wartime Health and Education submitted to the 78th Congress stated that of several factors which influenced distribu-

tion of physicians, "community wealth is probably the most important of all." However altruistic physicians may be, the expectation of a reasonable financial remuneration for their services will always continue to play an important part in their choice of location. We, as physicians, should not lose sight of our responsibilities as *citizens* to maintain conditions which will make for a continued high per capita income, especially in rural and smaller urban communities. As Doctor Eben Carey so well stated at our County Officers' meeting last year, "Medicine should co-operate with those who believe in Private Enterprise—to maintain independence for the American People" and "help to establish an economy of plenty instead of scarcity, because when people have good jobs, they want good doctors, and not hirelings of the politicians."

Obviously, this Utopian state cannot be rapidly or universally attained, but we should constantly endeavor to reach it and co-operate with all others interested in the same ends. Meantime, in order to extend the best medical care to as many people as possible on a basis embodying the principles that have made our American system of medicine the finest ever known anywhere, we should consider the various prepayment or voluntary service plans for distributing the costs in such a way that they can be budgeted for and met in an orderly way especially by those in the lower income brackets. Prepayment hospital plans are now widely distributed in Minnesota, and should be encouraged and extended. Further study and utilization wherever it can be worked out on a sound basis should be made of prepayment plans for medical and surgical fees. The American Medical Association and our own State Association have studied these at great length, and are ready to help any county medical society or group interested in developing such plans. Every physician and group should keep well informed along these lines, and be ready to make the most of such plans.

In summary, let us not forget that we have a responsibility in the great problem of adequate distribution of physicians to provide the best of medical care to people of all districts, rural and urban, in the postwar period. Every medical group should survey its own area carefully and determine its needs. In order to bring about conditions to encourage the practice of the best type of medicine, we should co-operate with all other

## POSTWAR MEDICINE IN MINNESOTA—ZACHMAN

interested groups to provide adequate hospitals, diagnostic centers, Public Health units, and other facilities, and to promote the widest possible use of those already existing. We should encourage the proper type of young people to enter the study of medicine and co-operate with our medical schools in any changes in medical education to better serve the people's needs. We should maintain keen interest in the further extension and development of prepayment and voluntary service plans for hospital and medical care. We must be ready to make changes, if necessary, to meet changing needs of people in our areas. And,

finally, we should endeavor to maintain the private enterprise system and extend its economic benefits to the greatest number of people and to keep the public informed as to the ways of availing themselves of the best care we are capable of giving them. To quote Doctor Carey again, "The doctor must assume his ancient role of teacher in order that the public may be informed adequately as to what medicine can and cannot do in order that through united action, co-operation and understanding, postwar prosperity and good medical care will become a reality and not a delusion."

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## POSTWAR MEDICINE IN MINNESOTA—DIAGNOSTIC CENTERS

A. H. ZACHMAN, M.D.

Melrose, Minnesota

IT is very evident that a topic such as "Diagnostic Centers" cannot be discussed intelligently without some definite interpretation of the meaning and extent of the term "Diagnostic Centers." Such a term may mean the ordinary laboratory facilities such as x-ray, biopsies, urinalysis, and blood chemistry—in other words, a fairly complete laboratory, or it may include specialists in various fields of medicine. I rather think the term means to include only complete laboratory facilities, rather than any complete medical service including specialists, and we shall discuss this topic on that basis. As you know, Senator Claude Pepper is one of the main sponsors of a bill to provide, among other medical facilities, diagnostic centers which shall be available to all the people of our great country, and especially to the rural areas, which, he claims, are bereft of such medical services. Just where Senator Pepper gets his information is a matter of conjecture. I presume he bases his claims of the supposed inadequacy of medical facilities on the findings in some areas in the South, where living conditions, low wages and nonproductive lands make it almost impossible to maintain the best of medical services. I am confident if he were to make a thorough survey of the northern half of our country, he would be more cautious

about asserting that there is such a general need of improvement in medical service. Be that as it may, however, we know that such reform movements are always appealing to the general public, and especially in recent years.

### Public Educated to Expect Government Aid

It has been the policy of our government to introduce various reforms and innovations in welfare activities ever since the days of the depression. The public has therefore been educated to look to the government for doles of all kinds, subsidies, and innumerable grants to the extent that the rural areas, in years past perhaps the most independent and self-reliant, are now trained and educated to expect and seek government gifts. That is why the farmers, even though as a whole they are receiving as good medical care as anywhere in the world, perhaps would agree with Claude Pepper that they do not have adequate medical facilities. And even though we, as medical men, may know any wholesale interference with medical practice to be unwarranted and uncalled for, we must nevertheless face the facts and counteract such possible trends in medicine if they serve no useful purpose.

### Minnesota Medical Facilities Adequate

Now the first question to ask ourselves is this: Are such diagnostic centers needed in Minnesota—for we are primarily interested in our own

Part of symposium on Postwar Medicine in Minnesota presented at the annual County Officers' meeting, Saint Paul, Minnesota, February 24, 1945.

welfare? In general, I believe not, at least not on an extensive basis. We have in our state a splendid Department of Health which offers satisfactory diagnostic facilities, laboratory studies, Wassermann tests biological studies, and even epidemiologists when requested. In addition, we have the facilities of the University Hospital, Sanatoria, and in our part of the state, an itinerant x-ray specialist. The University Hospital laboratory will provide diagnostic service for referred patients. X-ray plates are interpreted by the Public Health Association and by other roentgenologists. Specialists are available in the major cities such as Minneapolis, Saint Paul, Duluth, Rochester, and some other cities in strategic areas in the state, and I believe there are very few communities in our state which have not available within reasonable distance, such adequate facilities for diagnosis.

### **Local Control Desirable**

If, however, it is the intent of Senator Pepper's bill that each small area or county should have such facilities, then, of course, we would have to establish a considerable number of such centers in our state. If such be the intent of the proposal, then it behooves us, as leaders of medicine, to be prepared to suggest the location of such centers, and also to insist on the control of same. Certainly we must not permit welfare agencies, either federal or state, to administer such centers without our direction. Furthermore, it would seem logical to leave the decision as to the necessity and desirability of such centers to the medical men in such inadequately equipped rural areas, as they are the ones directly concerned. It is no doubt true that where doctors in some rural areas are inadequately equipped with diagnostic facilities, they might welcome such centers of diagnosis. If there are hospitals in such regions they might be designated as centers and given government subsidies.

Granted that such centers might be necessary in some rural areas, there are several points which might be advanced in favor of them.

1. Such centers might relieve the doctors in rural areas of the expense of obtaining equipment for costly diagnostic facilities.

2. Such centers would reduce the cost of diagnosis to the patient because they will be subsidized by the government.

3. Such centers would relieve the patient of having to travel great distances to the cities.

Such arguments, while apparently logical, must be given fair consideration and scrutinized from many angles. Responding to the first point, relative to the relief of the doctors—when has the government or the public concerned themselves with the doctor's expense in carrying on his practice? Answering the second point, has centralization under government control or government subsidy every proved to be cheaper in the ultimate analysis? As to the third point, no argument can be advanced against the desirability of cutting down the need for long travel distance.

Now let us look at the other side and present a few arguments against the establishment of such centers.

From the standpoint of the doctors, it is only fair to consider that many men have quite adequate equipment now, and no doubt the establishment of diagnostic centers would not prevent them from maintaining and operating their own equipment. But would it not be possible for such centers, operating under government subsidy, and thereby reducing the cost to the patient, cause many patients to forget their home doctors in order to obtain the cheaper diagnosis at such centers? Likewise, would not many young doctors hesitate to locate in small rural communities if many of the people in that area were in the habit of going to such centers directly? No doubt young doctors would locate in communities where such centers are located rather than out in the so-called "sticks."

Whether the establishment of such centers on a wholesale basis would not be fraught with the danger of centralization of medicine, thereby defeating the original intent of furnishing modern medical practice to the rural areas, is certainly open to debate. I doubt, however, whether we need fear any rapid development of government subsidy of medical centers as it would require many years before a sufficient number of adequately equipped laboratories and the necessary technicians would be available for such a grandiose project.

### **Competition Great for Smaller Hospitals**

Nor should smaller hospitals in the rural areas be content to sit by without some worries concerning this plan, for if certain hospitals should be designated as centers, would not the small hos-

pitals in that area suffer because they could not operate diagnostic facilities as cheaply as hospitals with government subsidy? And such smaller hospitals, without these complete facilities, might perhaps be forced to close down, thereby placing an additional burden on the larger hospitals throughout the state. No one will say that the small hospitals in the rural areas have not relieved the overtaxed and burdened larger hospitals for the past many years. These smaller hospitals must at least have available to them the service of such diagnostic facilities, by being linked or affiliated as an integral unit with such larger hospitals maintaining such diagnostic centers.

I believe the medical setup in our state is fairly adequate, except possibly for a few rural areas where such diagnostic centers might be useful and desirable. If such areas there be, would it not be much simpler to have the doctors in such areas express their desire to have such diagnostic centers made available to them, rather than upset the present setup of medical practice on a wholesale basis in our state? Any procedure which would bring about a complete and radical change in our present setup is certainly not necessary. Caution should be exerted in the establishment of diagnostic centers in the few areas where they are necessary and such centers must be established on the following basis:

1. Such centers must not have a tendency to centralize the practice of medicine.
2. The patient-physician relationship must not be disrupted.
3. Such centers must not be competitive with private practice, but rather co-operative and complementary in scope.
4. Service at such centers should be available to the public at the direction or suggestion of an attending physician or surgeon, and not because patients wish to avail themselves of such diagnostic service of their own accord.

We as doctors have the right as well as the duty to safeguard public health. We must maintain that ours is a professional calling as sacred and inviolable as that of the clergyman and the jurist. We must ever be on guard against any infringement on the right of a noble and unselfish profession. *Noble* because we have gained and kept the respect of the human race for many generations, and *unselfish* because we have placed the well-being of our fellowmen above all else. In conclusion then let us realize that this postwar medical problem is a matter of grave importance and concern, and those charged with the formulation of any new plans must be consistently, insistently, and persistently conscious of their responsibility to American Medicine—still the best in the world.

### SPONTANEOUS SUBARACHNOID HEMORRHAGE

ROBERT B. RADL, M.D.

Bismarck, North Dakota

**S**PONTANEOUS subarachnoid hemorrhage is a syndrome not uncommon in occurrence and yet as late as 1935, Bramwell<sup>3</sup> considered it to be a new disease in the sense that the accompanying clinical picture had only been recognized within the preceding several years. Review of recent medical literature reveals an increasing number of case reports indicating the importance and comparative frequency of this clinical entity. As a matter of fact, knowledge of intracranial aneurysm, the rupture of which is often the basis for spontaneous subarachnoid hemorrhage, is not

new and a large number of such cases have been reported. McDonald and Korb<sup>8</sup> found 407 articles published before 1938 on intracranial aneurysms and assembled 1,125 cases of saccular aneurysms of the arteries at the base of the brain, verified by autopsy or operation, 156 being located on the anterior communicating artery and 286 posterior to the internal carotid arteries, 786 of the 1,125 having been ruptured and of these 17 per cent were on the anterior communicating artery and 24 per cent were posterior to the internal carotid arteries.

What is meant by spontaneous subarachnoid hemorrhage? It may be caused by or be related

From the Department of Internal Medicine, Quain and Ramstad Clinic, Bismarck, North Dakota. The author is at present on military leave of absence.

to various etiologic factors such as trauma, intracranial aneurysms, intracranial tumors, hemorrhagic diatheses and others. Fetter<sup>5</sup> reviewed a series of sixty-eight cases of subarachnoid hemorrhage hospitalized on various services during a five-year period and stated that in many instances the final diagnosis was spontaneous subarachnoid hemorrhage. The tendency is increasing to confine the term "spontaneous subarachnoid hemorrhage" to nontraumatic hemorrhage caused by rupture of aneurysms of the Circle of Willis and its adjacent branches and we wish, in this paper, to so regard it.

Gull's<sup>7</sup> succinct statement is of interest: "Whenever young persons die with symptoms of ingravescent apoplexy, and after death large effusion of blood is found, especially if the effusion be over the surface of the brain in the meshes of the pia mater, the presence of an aneurysm is probable." Barker's<sup>2</sup> summary of signs and symptoms supplements the above.

1. A sudden onset often with a feeling as though something had snapped in the head and followed by severe occipital pain, which later tends to become generalized.
2. Nausea or vomiting almost immediately after onset.
3. Within a few hours marked rigidity of the muscles of the neck with positive Kernig and Brudzinski signs.
4. On cautious lumbar puncture blood will be found evenly distributed throughout the fluid in each of three successive tubes.

Martland<sup>10</sup> writing as Chief Medical Examiner, Essex County, New Jersey, analyzed fifty-four cases and emphasized the importance of this syndrome as a cause of sudden or unexplained death. He concluded that in every 100 sudden or unexplained deaths one may expect to encounter two cases of spontaneous subarachnoid hemorrhages. He pointed out that the bleeding occurs between the arachnoid and the pia mater which takes place almost always at the base of the brain and, though the blood spreads widely, it is still confined to the subarachnoid space. If the hemorrhage be of large amount the blood may follow this potential space and spread over the lateral and superior surfaces of the brain and even extend down the brain stem, producing rapid death by compression of the medullary centers. Extensive spontaneous subarachnoid hemorrhage is usually due to rupture of a congenital

aneurysm of one of the larger cerebral arteries in or near the Circle of Willis. When the aneurysm is not found at autopsy, either it may have been missed due to lack of proper autopsy technique or the defect may be overlooked because the aneurysm has entirely "blown out" and is lost in the torn tissues and surrounding hemorrhage. The pathologic lesions found in these fifty-four cases are as follows:

Ruptured congenital "berry" aneurysms.....	38
Undetermined source of bleeding.....	5
Ruptured hypoplastic cerebral arteries (associated usually with status lymphaticus).....	9
Ruptured aneurysm due to arteriosclerosis.....	1
Ruptured arteriosclerotic vessel.....	1

The incidence does not appear to be confined to a definite age group. Martland's figures for fifty-four cases are as follows:

Age	Cases
10 to 20 years.....	5
20 to 30 years.....	13
30 to 40 years.....	7
40 to 50 years.....	12
50 to 60 years.....	13
60 to 70 years.....	4

Sex	
Male .....	27
Female .....	27

Magee<sup>9</sup>, in 1943, reviewed 150 cases from material drawn mainly from the British Forces and Civil Defense Service which does not include all age groups, of course, and the statistics, therefore, require careful consideration as regards the conclusion drawn therefrom:

Age (Year)	Cases
Under 20 .....	9
21-30 .....	76
31-40 .....	56
41-50 .....	9

The actual underlying anatomic defect consists of small saccular aneurysms of the Circle of Willis or its larger branches, the bifurcations being especially involved. The aneurysms vary from 3 mm. to 1 cm. in diameter and resemble somewhat a "berry" which aptly led to such designation by Eppinger<sup>4</sup> who considered them to be of congenital origin. Forbus<sup>6</sup>, from his observations, came to the conclusion that military aneurysms of the superficial cerebral arteries and most probably of all other arteries occur quite independently of any inflammatory process, arteriosclerosis, or external trauma, and that these aneu-

rysms as such are not congenital malformations. He concluded that they are acquired lesions arising from a combination of focal weakness in the vessel walls, resulting from a congenital muscularis defect and degeneration of the internal elastic membrane, due to continued overstretching of this membrane. They occur at and occupy the angle formed by a branching artery as the defect in the arterial wall is always located at the bifurcation.

It is generally agreed that rupture may occur without trauma. Some cases have followed various degrees of exertion but some have had their onset during sleep. Syphilis definitely does not seem to bear a causal relationship. The symptoms, clinical findings, prognosis and clinical course depend on the location and amount of bleeding, irritation of the meninges and actual damage to the brain. Certain localizing symptoms and signs of unruptured aneurysms of the Circle of Willis or other intercranial arteries are outside of the scope of this paper.

Review of a number of cases impresses one with the uniformity of symptoms. The sudden onset with pain in the occiput or neck, often described as a feeling of being struck, is dramatic; nausea and vomiting, generalized headache, photophobia and stiffness of the neck usually follow. Loss of consciousness and convulsions are not common except in the terminal stage. The clinical findings tend to vary more than the symptoms. Rigidity of the neck and positive Kernig's sign are practically always present. Generalized muscular weakness without definite paralysis may be present. The reflexes vary but Babinski's test is usually positive.

The spinal fluid is usually under increased pressure and is uniformly grossly bloody and well mixed with the fluid. Later the spinal fluid may become xanthochromic in color.

Temperature and leukocytes may rise moderately.

The eye findings are of interest and diagnostic importance. Photophobia, nystagmus, choking of the discs and retinal hemorrhages may occur. Whether the retinal hemorrhages are due to extension through the subarachnoid space of the optic nerve or to obstruction of the central retinal vein is not clear.

Recurrences are common, but whether in the same aneurysm or in another aneurysm is open to speculation. Russell<sup>11</sup> reported the case of one

girl who was seen originally at the age of thirteen, on whom the diagnosis was repeated nine times thereafter. The opinion of Magee<sup>9</sup> on several points is quoted:

Of fifty recurrences in this series (150 cases reviewed), more than two thirds happened while the patient was still in bed or had been allowed up under the quiet and controlled conditions of hospital life. The emphatic testimony against stress and strain in the production of the primary attack seems to be underlined by the observations on recurrences, and it seems logical to propound that if these factors play no part at the end they can also be exonerated at the beginning. Indeed, as between rest and effort, this series suggests that the former deserves the greater share of the blame.

Therapy is not specific. Barker<sup>2</sup> in contradistinction to Magee<sup>9</sup> recommended bed rest for at least eight weeks. Lumbar puncture to relieve increased intracranial pressure is recommended by most authors. However, the procedure is not without danger and should be repeated only often enough, and then slowly and carefully, so as to relieve pressure. Cisternal puncture may be necessary to relieve brain stem compression.

The opinion of Ayer that there is no basis for the use of intravenous glucose seems logical.

Arteriography<sup>6,12</sup> and electroencephalography are receiving attention to assist in accurate location of the bleeding point or of the congenital cerebral aneurysm for possible purposes of surgical intervention. Ligation of the internal carotid artery has been performed in cases in which an accurate diagnosis was possible.

The fatality rate appears to be about 50 per cent.

Four cases are reported which are believed to be spontaneous subarachnoid hemorrhage. The first three cases were seen by the author and the fourth case is taken from the records of the Clinic.

### Case Reports

*Case 1.*—J. G., male, aged fifty, married, rural mail carrier. This man entered the hospital at 10:00 A. M. on July 10, 1936, stating that he had awakened from sleep at 4:00 A. M. on that date with a terrific headache in the occipital region and the headache persisted. He vomited once. The temperature was 98.6 and the pulse 76 and regular. Blood pressure was 142/100. Patient was clear mentally and co-operative. Pupils were regular and reacted to light. Extraocular movements were normal. Motions of the head and neck were normal and Kernig's sign was negative. Eye-

ground examination revealed no abnormal findings. On July 13, 1936, the headache had increased and there was pain in the region of the neck radiating around both shoulders. Physical examination showed some rigidity of the neck. On July 17, 1936, the patient complained of persistent headache which was not relieved by medication. Lumbar puncture revealed fluid to be under increased pressure and was uniformly mixed with blood. The patient was relieved considerably by spinal puncture. Spinal fluid was allowed to sediment. The spinal fluid Wassermann was negative and no organisms were found in smears of the spinal fluid.

The patient improved until 6:00 A. M. on July 20, 1936, at which time he had a generalized convulsion. Fifteen c.c. of very bloody spinal fluid was very gradually removed and this fluid was much more bloody than at the previous lumbar puncture. His condition rapidly became worse and the patient expired.

*Autopsy.*—There was much free and clotted blood in the subarachnoid space, covering both cerebral hemispheres and in the longitudinal sulcus. The entire brain was dissected free and removed in the usual manner. In the region of the Circle of Willis there was a large amount of clotted blood present. A rupture of the right posterior communicating branch was found. There was no sacculation of the vessel at this point. Both lateral ventricles and the third and fourth ventricles were filled with clotted blood. There was no evidence of hemorrhage in the brain substance nor of any of the larger vessels in the brain.

Histologic examination of section of the ruptured vessel was unsatisfactory. Sections of the liver, kidneys, and spleen showed no evidence of pathology.

*Cause of Death.*—(1) Rupture of right posterior communicating artery in the Circle of Willis (Aneurysm?); (2) subarachnoid hemorrhage.

*Case 2.*—W. R., male, aged twenty-four, single, farmer.

This patient entered the hospital on January 8, 1940. He stated that on January 5, 1940, at 8:30 P. M., while walking on the street he had a sudden attack of pain in the left occipital region and a feeling as though he had been struck. There had been no trauma of any kind. On the following day the back of the neck felt quite stiff and there was some headache. The headache had persisted and he had been unable to sleep. He had felt as though there was pressure on the eyes. There had been no loss of consciousness.

In October, 1939, while pitching hay, he had a feeling of severe pain in the occipital region which persisted for about two weeks. He stayed in bed for several days, but this did not seem to help him very much. There was no vomiting at that time. Examination upon admission to the hospital revealed some rigidity of the neck. Pupils reacted to light and extra-ocular movements were normal. On January 9, 1940, the white blood count was 19,200. Lumbar puncture revealed fluid tinged with blood. The eyeground examina-

tion on January 10, 1940, revealed both optic discs to be somewhat hazy and congested. The retinal veins in both eyes were dilated and engorged. The impression on that date was that papillitis was present, probably due to increased intracranial pressure. There was no definite papilledema at that time. The eyegrounds on January 12 were about the same as on January 10.

Blood Kahn and Wassermann tests were negative. The patient felt greatly improved on January 23. The rigidity of the neck had disappeared and he was discharged and instructed to rest at home.

The patient re-entered the hospital on January 31, 1940, stating that he had been getting along very well, but on the evening of January 30, 1940, while playing cards he developed the same type of left-sided occipital pain he had had previously. Lumbar puncture was done on February 1, 1940. Fluid was quite clear and revealed only 30 red blood cells and 1 white blood cell. Spinal fluid Wassermann was negative. On February 3, 1940, the patient had a severe headache and fainted at 10:00 P. M. and had a convulsion at 11:15 P. M., became unconscious and expired the next morning without regaining consciousness.

*Autopsy.*—Skull normal. Dura normal. No subdural hemorrhage. Superior surface of brain appears normal. Marked subarachnoid hemorrhage at base, extending laterally and anteriorly on to inferior surfaces of both frontal lobes. Right posterior communicating artery of the Circle of Willis was literally "blown out." Cut section through the brain revealed extravasation of blood from the base into the third ventricle. All ventricles filled with blood. No tumors or cysts, or areas of hemorrhage in brain substance.

Histologic examination of intact portions of right posterior communicating artery showed no evidence of congenital defect or inflammation. Sections of the brain at the base and from the point of extravasation of blood into the third ventricle indicated beginning organization of the blood clot. The hemorrhage was most likely due to the rupture of a so-called "berry aneurysm."

*Cause of Death.*—(1) Subarachnoid hemorrhage; (2) rupture of aneurysm of right posterior communicating artery of Circle of Willis.

*Case 3.*—Mrs. S. T., aged fifty-five, married, housewife.

This patient was admitted to the hospital on August 12, 1938, stating that she had been well until August 7, 1938, when she awakened from sleep with severe pain in the region of the neck. This had persisted with intensity. She felt quite well. There had been no nausea or vomiting. A physician had told her that she had had a cerebral hemorrhage. Examination revealed temperature of 100, blood pressure 130/180 and hemoglobin 92 per cent. White blood count was 16,250. Neurological examination showed no abnormalities except for slight rigidity of the neck. Lumbar puncture was done and the fluid was under increased pressure and was grossly bloody. On August 16 the temperature was 100 and blood pressure 160/90 and the rigidity of the neck had decreased. On August

## NEUROPSYCHIATRIC VIEWPOINT OF SOCIALIZED MEDICINE—HAMMES

20 another lumbar puncture revealed the fluid to be quite clear. Spinal fluid Wassermann was negative. On August 26, 1938, there was some increase of stiffness of the neck with occasional emesis. On September 2 the headache had decreased although it occurred intermittently. Stiffness of the neck had disappeared. The patient's mental condition was much better. Apparently the degree of impaired mentality upon admission had been underestimated. The patient was discharged from the hospital on September 17, 1938. Examinations on October 21, 1938, and on August 1, 1939, revealed the patient to be in good general condition except for frequent headaches in the frontal region and the vertex of the skull. Blood pressure on both occasions was 160/100.

*Case 4.—L. G., female, aged thirty-three, single.*

This patient was admitted to the hospital on March 4, 1918, with a history that the previous evening when returning from church she suddenly had a pain over the right ear. She felt dizzy and could not see the door. There had been marked nausea and vomiting. The patient on examination was found to be very restless and was apparently having severe pain in the head and the neck, and was vomiting frequently. Neurologic examination revealed retraction of the head and positive Kernig's sign. Pupils were dilated but equal. Both optic discs showed choking. Fifteen c.c. of bloody spinal fluid were removed and examination of this fluid revealed 3,400 red cells, white count of spinal fluid, 240. Spinal fluid Wassermann was negative. Venesection of 500 c.c. of blood was performed. On March 7 the Babinski test was positive bilaterally, but more marked on the left side. The right optic disc was more choked than the left. The patient in general was considered to have shown improvement. On March 8 there was marked rigidity in the neck with slight positive Kernig and strong bilateral Babinski signs. Lumbar puncture of 15 c.c. of blood-tinged fluid was done. On March 17, 1918, neck rigidity had disappeared and the patient was discharged.

The patient's general history showed no abnormality until April 10, 1924, when she entered the hospital again with the chief complaint of pain over the frontal region radiating into the occiput. This was followed by nausea and vomiting. Examination showed the sensorium to be clear. The pupils were equal. There was questionable positive Babinski on the left side. Blood Wassermann was negative. On April 14, 1924, neck rigidity was found and Kernig's sign was present. Examination of the fundi revealed choking of the left disc and edema of the right disc. Spinal fluid revealed the presence of xanthochromic color. Spinal fluid Wassermann was negative. On April 19 there was still some rigidity of the neck. There was marked improvement since the spinal puncture. The patient was discharged from the hospital on April 21, 1924, and notation on June 3, 1924, was to the effect that the patient felt very well.

This patient was seen by the author in 1940 and there had been no known recurrence to that date.

### References

1. Ayer, Wardner D.: Spontaneous subarachnoid hemorrhage. *Am. J. Surg.*, 26:143, 1934.
2. Barker, Lewellys F.: Spontaneous subarachnoid hemorrhages and their relations to rupture of small aneurysms in or near the Circle of Willis. *Ann. Int. Med.*, 10:98, 1936.
3. Bramwell, Edwin: Spontaneous subarachnoid hemorrhage. *British M. J.*, 2:512, 1935.
4. Eppinger, H.: Pathogenese der Aneurysmen einschliesslich des Aneurysma equi verminosum pathologisch anatomische Studien. *Arch. F. Klin. Chir.*, 35: 1887. (Suppl.-left).
5. Fetter, William J.: Subarachnoid hemorrhages. *Pennsylvania M. J.*, 46:949, 1943.
6. Forbus, W. D.: On the origin of miliary aneurysms of the superficial cerebral arteries. *Bull. Johns Hopkins Hosp.*, 47:239, 1930.
7. Gull: Guy's Hosp. Rep., 3:281, 1859.
8. McDonald, Charles A., and Korb, Milton: Intracranial aneurysms. *Arch. Neurol. & Psychiat.*, 42:298, 1939.
9. Magee, C. Gaultier: Spontaneous subarachnoid hemorrhage. *Lancet* 2:497, 1943.
10. Martland, Harrison S.: Spontaneous subarachnoid hemorrhage and congenital "berry" aneurysms of the Circle of Willis. *Am. J. Surg.*, 43:10, 1939.
11. Russell, Colin K.: Spontaneous subarachnoid hemorrhage following rupture of a congenital aneurysm of the anterior communicating artery of the Circle of Willis. *Tr. Am. Neurolog.*, p. 130, 1939.
12. Woodhall, Barnes and Lowenbach, Hans: Congenital cerebral aneurysms lateralized by electroencephalography. *South. M. J.*, 36:580, 1943.

## THE NEUROPSYCHIATRIC VIEWPOINT OF SOCIALIZED MEDICINE

ERNEST M. HAMMES, M.D.

Saint Paul, Minnesota

WE are meeting at a time when the neuro-psychiatrist has stepped into an unaccustomed spotlight.

There is scarcely a field, military, political, social or even economic, in which a fumbling, uncertain world has not suddenly become aware of

the tremendous importance of mental aberration and nervous disease as a factor in its problems. From all sides there is a clamor for some magic from the neuropsychiatrist which will point the way.

There is no doubt that the effective solution of many of the weightiest problems that face the world today lie in the realm of the mind and

President's Address presented at the Twenty-first Annual Meeting of the Central Neuropsychiatric Association at Chicago, October 31, 1944.

spirit. It will not be enough to provide food and police protection for the great mass of people in occupied lands for instance, and especially for the defeated enemy. We cannot count the victory of our arms as more than one additional episode in perpetual world-wide conflict unless we can understand, and, in some measure, cope with the mental processes created by the aberrations of the Nazi doctrine and the effect of total defeat and the hatred and misery left in its wake, both among the conquered and conquerors.

We cannot plan for a healthy, sound and prosperous America unless we can learn to interpret the real meaning of security and fair dealing and to assess the needs for mental health of our people.

To achieve the solution of all of these problems will require more perhaps than the neuropsychiatrist, as a specialist, can offer.

As a group, we number some two and one-half per cent of all practicing physicians in this country. Nevertheless, we are qualified leaders in an approach and method that is vital to the solution of national, as well as international, problems. There can be no doubt that ours is a heavy and a special responsibility to do what we can in many fields to direct a course toward a new and better way for the future.

Tonight, I do not propose to venture into the larger issues of international relations, but it seems to me that we may well consider here one vital phase of planning for the future of America, the phase represented by the phrase "social security," and especially social security as applied to the medical service for the prevention and cure of disease and disability.

There are, as you know, two general schools of thought in America, today. They are roughly represented in the thought and policies of the two major political parties. One of them assumes that unlimited free enterprise was possible only so long as we were a pioneering nation with great frontier territories to develop and despoil; that now, having passed the stage where the vigor and initiative to pioneer in new lands were all that was necessary to create individual security, the nation must collectively protect its citizens from want in a dwindling economy.

The other assumes that pioneering is not limited to the opening of new territories nor the cutting down of new forests, nor the random

rush for new and easy riches: that America has only begun to mine the riches that lie in the fields of science and human invention: that, to set our goal, now, upon a meager pittance of collective security for all, would clip the wings of the world's greatest experiment and sap the American spirit, so that all of our national energies would go toward providing merely for a phantom, since security in any real sense must always be a phantom.

It goes without saying (quite apart from the political campaign of the moment) that we as physicians and especially as neuropsychiatrists, cannot possibly agree with the point of view that the human spirit, and especially the human spirit in America, reached the limit of its achievements when the forests were cut down and the pork in Congressional barrels, which was apparently inseparable from the building of empire, was all distributed.

We, as physicians, know what happens to people when they seek only security for themselves and their children and how they decay under handouts of half-measures they did not earn themselves. We know that there is no such thing as security except in the grave and that men thrive and grow only when challenged by the apparently impossible; and that there is no end in this world of apparently impossible goals toward which men can work.

Now all this, of course, is mere philosophic background and no comfort, you may say, to the man who happens through no fault of his own to be unable under our present system of private practice, to afford the services of a doctor or hospital.

The question is: Would a half measure of service be better than none at all for this man? Are we justified in posing the case for quality, for high standards in medical practice and for the freedom from government control that is absolutely necessary to full scientific development, against the case for using power of the law and the support of government funds to meet this man's need?

This is a matter about which we should think seriously and fairly as physicians. It is a matter in the consideration of which we are forced to leave out personal preference and individual advantage, because it is a problem that must and will be solved ultimately in the interest of the patient and not of the doctor.

If, indeed, it is better that the government should step in and take care of this patient, then any opposition we may organize will be futile in the long run, and we shall be placed in the unlovely and discreditable position of fighting for personal advantage against the public good.

The fact is, of course, that we do not believe it is better. We believe that America will step backward and downward if the responsibility for caring for the sick is turned over to the government, just as we believe Americans will deteriorate if their other responsibilities for providing the necessities and joys of life are turned over to the government. Furthermore, we believe that the quality of service provided will deteriorate and that inferior service is worse than none at all.

Cheap medical care, publicly—which means politically—controlled medical care, may, in truth, stretch to every corner of the United States. But the chances are, it will not be good medical care. And anything less than good medical care may mean the difference between life and death to the man who needs it.

That is our belief, based upon the experience of every day for every one of us. Now, then, we must also answer this question. Is it a counsel of perfection we are espousing, a fine idea, lovely to contemplate but impossible of realization, except for a favored few? A great many of our critics say so. In fact, the distinguished Dr. Alan Gregg, medical director of the Rockefeller Foundation, was recently quoted by the columnist Drew Pearson as having said so at a Senate committee hearing, conducted by Senator Claude Pepper. Dr. Gregg apparently observed at this hearing, that medical schools of the United States are "turning out physicians for middle- and upper-class patients in cities and not for the great mass of the population of rural communities."

I wonder if what Dr. Gregg really meant to say was this (he could have said it with less distortion of the truth) : that medical schools are turning out physicians trained in the best methods and according to the highest standards attainable, regardless of who are to be their patients or where they are to practice. The reason they are doing so is sound. It is that the best is none too good, as we all know well, and that every American, no matter where he lives or what his income, has a right to expect the best under our system. I leave it to you whether it is a fact, judging by

your own experience in your communities, if only middle- and upper-class patients in cities get medical service of a high standard in the United States. It is not true in my own state of Minnesota. It is not true in the states of the Middle West with which I am acquainted. It is undoubtedly true in a few remote sections where population is scattered and in a few substandard sections where housing, food and other essentials are also deplorably inadequate for too many people.

We have gone far, very far, in providing the best for everybody in these United States, under our system of private medicine with government aid where it is manifestly needed and can properly be given. We have not reached perfection, of course, though we have gone farther along the way than any other civilized nation. We see gaps in our services; we are aware that there are unmet needs. We also see where we can meet many of these gaps without endangering our ideals or our standards and we are confident that a way can be found to provide the best for all. If we turn our practice over to government bureaus we shall achieve quantity, perhaps; but we know that we shall sacrifice quality. If we throw our vote for quality, we know we shall continue to grow in scientific knowledge and skill and we believe we are capable, at the same time, of enlarging the quantity and improving the methods of distribution so that no patient in the United States need ever lack the best service possible at a price he can afford to pay.

Believing that, it is clear that we, as physicians, and especially as neuropsychiatrists, who should know better than anyone else how important it is to preserve freedom and directness in the contact between doctor and patient, have a job to do. We must, of course, make clear, in terms of the public interest, the importance of the issue at stake. All of us realize that obligation and many of us have done what we could in defense of the principles of private practice. But we must go further and do better than that. We must center our attention, not upon our achievements in the past, but upon the unmet needs of the future, and we must find practical ways to meet these needs.

It will not do, in these days of unrest and social ferment merely to tell the world how well we have done, how brilliantly we have advanced and

how much better we are than Germany, France or Russia or Britain, even if we can back up our statements with figures, as no doubt we can.

Comparative figures mean little when they are opposed to the solid fact that here in America there are people who need doctors and do not have them, even if the number of people is small. The easiest way to see that they have them is to pass a law, appropriate funds and hire doctors. But you do not pass a law of that kind for just one town and one group. You pass it potentially for all. Soon, if you follow the easiest way, you have a vast, full-blown system of medicine by edict and rule book. Figures mean little to people who are paying fees they believe are too large; and the easiest way to abolish burdensome fees, also, is to mask them in taxes.

It seems to me, indeed, that this matter of fees requires serious investigation and action on the basis of impartial study. Joseph W. Mountain, Medical Director of the United States Public Health Service in his chairman's address stated, "most of the current controversy in respect to medical care centers on methods of pay for service, rather than on how the service is to be provided. These are separate but intimately related questions. The former is likely to be determined finally as a political issue, while the latter should be solved by the medical profession itself." It is my firm belief that both of these questions can and must be solved by the medical profession.

Medical organizations all over the country have already taken experimental steps toward the development of nonprofit plans for spreading costs of medical service, paralleling the extensive provision for meeting hospital expense. The Blue Cross Membership for prepaid hospital service exceeds 15,000,000 today. Prepayment medical service plans are now in operation in about fifteen states and many more are studying the program.

This represents real progress in our effort as physicians to extend the benefits of private practice to all and to ease the burden of costs to the individual patient. It seems obvious that the pos-

sibilities of applying the insurance principle to medical costs must be fully explored, not by the government, but under the active and enthusiastic leadership of the medical profession.

As specialists in nervous and mental disease and maladjustments, we, of all men in the profession, should value most highly the personal, confidential relationship of patient and physician. This relationship would be endangered inevitably by government medicine. We, above all, should value our freedom and the preservation of the incentive which prompts investigation into *unexplored* fields since there are still so many unexplored fields in our own specialty. These are the things we must safeguard; and we must be willing to sacrifice much to preserve them. Old machinery and outworn habits which have grown up in our system of practice must now be faced and perhaps revolutionized if they contribute nothing either to the patient or to the development of our practice of medicine. And we must be willing and ready to revolutionize them.

It may be that too much is demanded of our profession in which we have such substantial investments. It is rare, if not unprecedented, that any group such as ours, with vested interests in an established system, ever pulls itself up by its own bootstraps. To do so requires a determination, a foresight and a humanitarian spirit above the capacity of most men.

But we did as much or more when we reformed our medical schools and when we standardized our hospitals. I believe we have the spirit and we are capable of the foresight and determination to adjust the social and economic aspects of practice to the present needs. The challenge is upon us. The dangerous alternative has already been proposed and is being vigorously championed by many intelligent, if misguided, men and women. It is my hope and belief that we shall be able to meet that challenge. Furthermore we as individuals, and national organizations such as ours, will and must give our united support to this problem and in doing so protect and preserve the American system of medical practice.

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Tuberculosis can destroy the finest human material in every nation. Yet all modern knowledge shows that this disease, if fought with medical and social weapons

known to us now, can be cured and largely prevented.—HARLEY WILLIAMS, M.D., Am. Rev. Tuberc., January, 1945.

## ELECTRO-SHOCK THERAPY IN A STATE HOSPITAL

M. W. KEMP, M.D.  
Moose Lake, Minnesota

WE have been using electro-shock therapy at this state hospital now for over three years, during which time 465 patients have been treated and a total of over 10,000 treatments have been given. Prior to the use of electro-shock therapy in our clinic, we had used extensively, for a period of four years, both insulin-shock therapy and metrazol-shock therapy. The number of electro-shock treatments given varied. Some received only six or eight treatments; others received as high as sixty where the treatment was carried out over a long period of time or where a series of treatments was given. The youngest patient was fifteen years of age, the oldest sixty, most of our patients being between thirty and forty-five years of age. Patients were not selected persons, but the treatment was given in a variety of mental disorders, the criterion being whether we thought this type of therapy would be beneficial or not. Almost without exception, patients given this treatment had shown mental symptoms for six months or longer and in a large number mental symptoms had existed for three or four years prior to the treatment. Some had received insulin or metrazol prior to being hospitalized here. Included also were some patients who had been hospitalized as long as ten or twelve years. Since the treatments have been given over a three-year period, there has been an opportunity for a follow-up of a large number of these patients. Of the 465 patients treated with electro-shock, 207 have been paroled or discharged, their hospital stay varying from one or two months to over a year following the treatments.

The machine used is a standard portable type, and grand mal seizures were produced routinely. A special hospital bed is used with a four-inch-thick sponge-rubber mattress. We have been fortunate in having very few injuries and in this series there was one fracture of the humerus, two shoulder dislocations, and two patients in whom recurring dislocations of the mandible occurred. Infrequently, there were some complaints on the part of several of our patients of soreness of muscles, particularly of the chest

and lumbar region, which were carefully checked by x-ray and no evidence of fracture or dislocation found. Whereas, with the use of insulin shock and metrazol shock a number of patients objected to the therapy, very few patients offered any objections to electro-shock therapy. Those who did, were usually patients who felt there was nothing wrong with them and that they did not need treatment of any kind nor hospitalization. Some who were critical at first, as they improved and gained insight, were enthusiastic about the treatment. Particular attention has been given to preventing any patient who was to receive shock treatment from observing the treatment being given to another patient. There was no mortality and there were no untoward effects, although in the series presented were a number of patients who showed evidences of arteriosclerosis and heart disease, and who we considered to be poor risks. One patient with pulmonary tuberculosis, who was given treatments over a period of several weeks, showed some slight increase in the activity of her tuberculous condition, although we could not be sure that this was due to the electro-shock treatment. She was very depressed and moody and had made no progress at all until given electro-shock treatment, following which she promptly improved, made a complete recovery from the depression, and has since been returned to a tuberculosis sanatorium for pneumothorax.

Our procedure with respect to the number of shock treatments given has varied, depending on the type of patient, and the progress resulting from the treatment. As a rule, we gave two treatments a week, occasionally three, and a total of ten or twelve treatments in a series. From this we have varied frequently, for example: to a depressed or agitated person, or one who is actively suicidal, we have sometimes given three or four treatments on successive days in order to hasten recovery, and then continued treatments twice a week. It was found that a number of patients, both manic depressive types and schizophrenia, and other types, made very good progress while under treatment but relapsed when

the treatments were discontinued, and we have followed, in some of these cases, the practice of giving a treatment once a week over a period of several months. In this way patients can be maintained in rather satisfactory mental condition who otherwise had shown such regression that they could not be interested in any hospital activities, and other forms of therapy such as occupational therapy could not be used. A number of our patients who had shown mental symptoms for years, with much withdrawal from reality, we were able to stimulate sufficiently with electro-shock treatments to have them show an interest and alertness that they had not shown for years. It has then been possible to get them under other types of treatment and sometimes we were successful in maintaining a considerable amount of improvement so that they could be released on parole.

The following list shows the types of patient treated and results:

Psychosis	No. cases treated	Recovery or very satisfactory adjustment	Improved	Poor Result
Schizophrenia				
Hebephrenic	175	75	71	29
Catatonic	48	19	16	11
Paranoid	74	19	47	8
Simple	11	0	7	4
Manic Depressive				
Manic	19	5	4	10
Depressive	29	22	3	4
Involution Psychosis				
Melancholia	26	21	4	1
Paranoid, and other types	20	10	9	1

Electro-shock therapy was also used for a variety of other conditions such as paranoia, psychoneurosis, cerebral arteriosclerosis, general paresis, and for some psychopaths committed under the State Psychopathic Law. As might be anticipated, the results were not always conclusive and the improvement was variable. In several sex psychopaths, in whom difficulties had arisen a short time before coming to the hospital, and where we thought some change in their behavior pattern might result, we think some slight benefit resulted. In three out of four cases of general paresis, after a great deal of other treatment, we were able to see distinct improvement. The history of one of these cases is presented herewith. In the depressions of cerebral arteriosclerosis, we were

able to see improvement in four out of seven cases. In three out of seven patients with paranoid condition a good deal of improvement was seen, these being patients in whom difficulty, resulting in their commitment, was quite recent.

The result of our series confirms reports from other clinics and there seems no question that the best results are obtained with electro-shock in depressions, particularly the agitated depressions of the involution period of life. Not nearly as good results were obtained in the manic phase or manic depressive psychosis. Another type that is improved quite consistently is the catatonic dementia praecox. As will be seen the hebephrenic and paranoid types were improved rather consistently; in fact we were surprised that we got as good results in schizophrenia as we did. After using electro-shock treatment for three years in the treatment of schizophrenia, I am quite sure the results are much better than with insulin-shock therapy, not to mention the expense, nursing care, and the time required in giving insulin-shock therapy, and the additional danger to the patient. Following are presented two of our patients to illustrate the many types of behavior that are seen frequently in state hospitals in which the use of electro-shock proved definitely beneficial and in the first case resulted in a very satisfactory adjustment and discharge. In the second case, by continued use of electro-shock we were able to keep this patient, who was suffering from a severe involution melancholia, comfortable over a period of several years.

A. J., a train man, forty-seven years old and married, was admitted November, 1941, with positive findings of general paresis. Before admission he had had twenty months of arsenical treatment and malaria therapy. He had been showing peculiarities of behavior for six months. On admission he was stubborn, accused the railroad company's physician of unfairness and of preventing him from being promoted. Thought his railroad employe associates were unfriendly and were persecuting him. Had some grandiose ideas as to his ability to stop the war.

He was given intensive treatment for a year of tryparsamide intravenously and bismuth subsalicylate intramuscularly, and another course of malaria in which he gained weight, and there was some improvement in his spinal fluid. There was no improvement in his mental condition, and his paranoid symptoms continued without change. It was impossible to get him to occupy himself and he was very antagonistic towards his family. In an effort to alter his behavior pattern, he was given two courses of electro-shock

treatment, in which we gave him several daily treatments for a time, and several months later repeated this course. Following the second course of electro-shock treatment, he promptly began to show a great deal of improvement and became much more reasonable and co-operative as far as his family was concerned so that we were able to release him in October, 1943, and he has since been re-employed by the railroad company in his former position, and his adjustment has been very satisfactory now for over a year.

M. S., a housewife, fifty years of age, was admitted in June, 1940. She had had several miscarriages and a tubal pregnancy but had no children. She had been hospitalized elsewhere and had shown mental symptoms for a period of over four years. She had been suicidal and despondent, overly religious, self-accusatory, very agitated, at times would become almost incoherent and unable to understand or grasp what was said to her because of her agitation.

A course of electro-shock treatments brought about prompt improvement following which she took up occupational therapy, continued with musical programs, composed some musical numbers that were rather good, and wrote poetry, and in every respect appeared as normal as she had been, and this was maintained for a period of several weeks. She then again became very agitated and depressed, and was again improved by a course of some ten electro-shock treatments. Improvement did not last. She again became agitated so that we began giving her one or two treatments a week

and during much of her stay of four years in the hospital, electro-shock treatments were continued usually once a week, but sometimes twice. Without these treatments the longest interval she remained at all free from a very agitated depression would be three or four weeks. A prefrontal lobotomy was recommended for this patient, but because of opposition by her aged father consent could not be obtained until recently, and plans are now being made for her to have this operation.

In summary, a wide variety of mental disorders of a type characteristic of any state hospital have been treated by electro-shock. In depressions of the involution period of life and in manic depressive depressions, recoveries or very satisfactory results were obtained in about 70 per cent of the cases treated. In schizophrenia excellent results were obtained in 40 per cent and much improvement in an additional 35 to 40 in the hebephrenic and catatonic types. Patients in whom mental symptoms had been in existence for a number of years were frequently benefited by treatments once a week or even less frequently, over a period of months. In organic conditions, where other treatment has been ineffectual, we think electro-shock is occasionally helpful.

#### MEDICINE AND PUBLIC HEALTH

For too long a time this backward old world has permitted millions of its citizens to drag through the day just barely able to do their tasks because of debilitating illness, the prevention and treatment of which has been too expensive for their pocketbooks. The recent report on "Wartime Health and Education" by Senators Pepper, Thomas and LaFollette makes that quite clear.\* With 23,000,000 people in the country suffering from chronic disease, more than 3,000,000 with impairments such as deafness, blindness or orthopedic handicaps, and more than 1,000,000 with hernia, with industrial casualties during the first two years of war higher than the military casualties, America has finally begun, under the pressure of manpower and womanpower shortages, to understand that positive health is one of our Nation's greatest assets, and preventable illness one of its greatest weaknesses.

This awakening has brought out into public concern the utter wastefulness of providing Mr. A, who has a fat pocketbook but a minor illness, with the best medical, hospital and nursing care that money can buy, and permitting Mr. B. with a curable but potentially fatal disease, to seek the tag ends of care, meted out by lady bountifuls who feel sad about "those poor people across the tracks."

Manpower shortages on the home front, however, are only one cause of this rising public concern. The men and women who have left their communities to serve their country in the Armed Forces have broader horizons. Men who never knew what good medical and nursing care was like have been getting the best that our modern society provides. They have seen how it can keep people healthy and give them a zest for living. They will not be satisfied to see fifth rate care provided to their families at home on a charity basis when they come home. They will be asking some pretty point blank questions and they will expect some pretty point blank answers.

\*Wartime Health and Education—Interim Report from the Subcommittee on Wartime Health and Education to the Committee on Education and Labor, United States Senate, Jan. 1945, Govt. Printing Office.

# CLINICAL-PATHOLOGICAL CONFERENCES

## CASE FOR DIAGNOSIS

F. J. HIRSCHBCECK, M.D., and ARTHUR H. WELLS, M.D.

Duluth, Minnesota

DR. F. J. HIRSCHBOECK: This thirty-five-year-old attorney first came under my care about three months before his death suffering from a low grade chronic congestive heart failure. He had been seen repeatedly by various physicians in the Student Health Service at the University of Minnesota for four years beginning fifteen years before his death. At that time he was repeatedly diagnosed as mitral regurgitation with hypertension. This was on the basis of a blood pressure of 140/90, a soft systolic murmur at the left internal border and another at the apex which was transmitted to the axilla. A soft diastolic murmur medial to the apex was not transmitted. There was an aborization block interpreted in the electrocardiogram. Dr. L. G. Rigler felt that the orthodiograms revealed a cardiac enlargement the result of mitral deformity with "regurgitation predominating." The measurements were considered due to a relatively large left ventricle and small left auricle. Dr. Moses Barron of Minneapolis subsequently treated this patient for his cardiac condition for almost a year with "phenomenal" success in relieving a most severe general anasarca with bedrest, digitalis and salyrgan.

Under my care the patient refused to have a thorough examination so the therapy advised by Dr. Barron was continued. One month before his death he was admitted to St. Luke's Hospital in what proved to be his last attack of clinically typical chronic congestive heart failure. He had had rheumatic fever at about the age of six and there were later attacks of the same disease. Fourteen years before his death he was advised against strenuous athletic activity. He played hockey including professional hockey during the following seven years. His cardiac condition apparently gave him little trouble until two years before his death when his chief trouble was that of edema collecting all over his body particularly in the legs and face. Exertion made him short of breath and caused a feeling of pressure in the pit of the stomach. He had attacks of nocturnal dyspnea. There was some abdominal distress lasting 1½ to 2 hours after eating. His appetite remained good and he was a heavy drinker of alcohol. Frequent cathartics were used. There had been no attacks of pain. The physical examination revealed a blood pressure of 195/125, pulse 96 per minute and regular, temperature of 101.4° and respirations 32 per minute. There was a grade IV pitting edema of the ankles and a few moist rales at both bases of the lungs, posteriorly. The apex beat was in the sixth interspace in the anterior axillary line and the left border was found in the midaxillary line. There was

a palpable systolic thrill over the precordium and a short diastolic murmur at the base. The spleen was considered enlarged to percussion but not palpable. The tender liver extended 4 inches below the right costal margin. His color was fairly good. There was slight clubbing of the fingers. His condition improved rapidly under digitalis, salyrgan and theophylline therapy with rest in the hospital. He left the hospital contrary to advice one week after admission and one month before his death. During this interval he remained at home, occasionally preparing his own meals and not showing much change in his condition until his sudden and unexpected death.

DR. A. L. ABRAHAM: The x-ray picture (Fig. 1) is that of a huge globular heart extending over to the lateral thoracic wall on the left and slightly enlarged to the right. The outstanding feature in this antero-posterior view is the remarkable enlargement of the pulmonary artery and its branches. The branches cast a shadow in the hilum of the lungs which might be mistaken for diseases of the lungs or hilar lymphnodes. The aortic arch is clearly defined and is comparatively small but actually approximately normal in size. One should have an oblique view to determine the size of the left auricle.

DR. S. H. BOYER, SR.: The electrocardiogram submitted by Dr. Barron reveals the following diagnostic features: (1) Right axis, (2) Abnormally large P 2-3 with P4F inverted, (3) Abnormally long conduction time of QRS complexes. (4) Depressed segments in L3 and 4F together with inverted T2-3-4F. Slurring and notching. My interpretations are: (1) Right ventricular hypertrophy, (2) Enlarged auricle, (3) Conduction fault in the Purkinje system and ventricular muscle fibers, sometimes called indeterminate intraventricular block. (4) There is a single ectopic ventricular beat in L2.

DR. A. H. WELLS: This case is now open for any questions or diagnoses.

PHYSICIANS: "Mitral stenosis due to rheumatic heart disease." "Mitral stenosis with adhesive pericarditis." "Congenital ventricular septal defect." "Coarctation of the aorta." "Hypertensive cardiovascular disease." "Patient ductus arteriosus." "Congenital interauricular septal defect."

### Autopsy

DR. A. H. WELLS: Dr. George Berdez's diagnosis of congenital interatrial septal defect is correct with minor additions.

From St. Luke's Hospital, Duluth, Arthur H. Wells, M.D., Pathologist.

The essential pathologic findings in this well-developed, robust, young man were those in his heart and the complications of chronic passive congestion in other organs of the body. His heart weighed 1,030 grams. Its left

the dilatation of its lumen to a circumference of 13 cm. The aortic valve measured 8 cm. in circumference and appeared competent. The mitral valve had no significant fibrosis and appeared competent. The lumen of the right

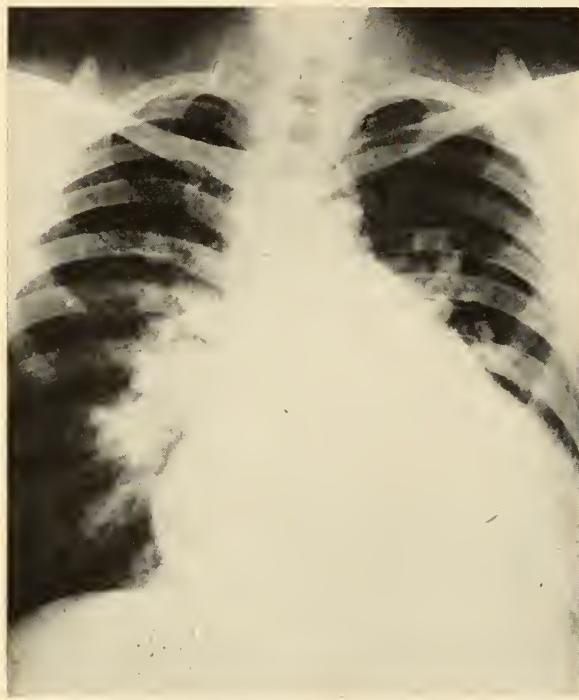


Fig. 1. Huge globular heart, large pulmonary artery and branches and small aorta.

lateral border pressed closely against the lateral chest wall 15 cm. from the midsternal line while the right border was in its approximately normal position. Pericardial surfaces had no adhesions or injection. There was a remarkable enlargement of the right ventricle with some torsion of the heart so that almost all of the *in situ* presenting aspect of the heart was made up of right ventricle and right auricle. Only a small area of the left ventricle could be seen at the left border. The pulmonary conus, pulmonary artery and its branches were quite large, while the aorta (7.5 cm. in circumference) and its arch were slightly smaller than average size. There was a large septal defect posterior to the annulus ovalis (Fig. 2) measuring 3 cm. in diameter. A sharp margin of septum secundum of from 1 to 3 mm. in breadth could be identified about the opening (ostium secundum). The remainder of the septum was not unusual. The right auricle was severely dilated and the right ventricle was huge. The thickened walls and trabeculae carneae of this cavity accounted for an estimated 70 per cent of the heart weight. The tricuspid ring was dilated to 18 cm. in circumference and its well-formed leaflets were for the most part flat against the ventricular walls. There was a mild dilatation of the left auricle and moderate hypertrophy of the left ventricular musculature which measured 2 cm. in breadth. The pulmonary valve was incompetent as the result of



Fig. 2. Huge right ventricle and right auricle opened exposing auricular septal defect and dilated tricuspid valve.

coronary artery was approximately three times its average size while the left coronary and its main branches were mildly dilated. There was a small amount of subpericardial fat. The musculature of both ventricles was somewhat pale and quite firm. There was no fibrosis or further degenerative change.

Seen microscopically the cardiac muscle fibers were huge and their nuclei were correspondingly large, irregularly shaped and hyperchromatic. Systemic effects of chronic congestive heart failure included a moderate general anasarca without pulmonary edema with severe chronic passive congestion of the liver, spleen and kidneys as compared with mild similar changes in the dependent parts of the lungs.

#### Discussion

DR. A. H. WELLS: With your indulgence, I will briefly review the principal facts and theories concerning the types of interauricular septal defects, the frequently associated congenital cardiac anomalies and the secondary pathologic changes in the heart.

A knowledge of the various types and combinations of congenital interauricular septal defects depends upon an understanding of the development of the interauricular septum. It suffices here to briefly describe the development of this structure in two phases. The ostium primum is closed by the septum primum which grows down from the roof of the common atrium to meet the fused "endocardial cushions" a septum growing up from the floor or the interventricular septum. Absence, incomplete or abnormal development of either or both of these septal formations are considerably rarer than defects in the second phase of the embryologic development. Simultaneous with the primary closure of the ostium primum is a development of an opening posteriorly called the ostium secundum. A septum secundum grows to gradually close the resultant foramen ovale. This second phase of the formation of the interauricular

septum may be stopped or defective at any part of its development. There may exist combinations of defects.

A slit-like opening of the foramen ovale variously reported as being present in from 20 to 30 per cent of the postmortem material<sup>2,3,4</sup> has no significant effect upon cardiac function. However, the decidedly rare (close to 100 reported cases<sup>8</sup>) defects in the interauricular septum measuring more than 1 cm. in diameter are serious lesions.

Among the sixty-two cases collected from the literature by Roesler<sup>5</sup> there were forty-one with mitral valvular lesions a proportion much higher than that found in other congenital anomalies. Six of his collection had "buttonhole" mitral stenosis. Roesler had omitted from his collection all cases of complete absence of the interauricular septum (cor biloculare or triloculare) also cases associated with patent ductus arteriosus, pulmonary stenosis, interventricular septal defects (maladie de Roger), and high-grade coarctations of the aorta. Interatrial septal defect associated with mitral stenosis (Lutembacher's disease) has provoked considerable controversy in the literature concerning the congenital or acquired nature of the mitral lesions and their relationship to the origin of the patent septum.

Secondary pathologic changes in the heart resulting from the patent interauricular septum are described in some detail in our case presentation. They include a remarkable dilatation of the right auricle and right ventricle with hypertrophy of the walls of these two cavities; also enlargement of the pulmonary conus, dilatation of the pulmonary artery and its principal branches, and some rotation of the heart so that the right ventricle and right auricle form the principal presenting parts. The tricuspid valve frequently becomes incompetent due to dilatation as does the pulmonary valve on occasions. There is generally comparatively little dilatation and hypertrophy of the left side of the heart. The aorta is either normal or small. Associated congenital and acquired defects may alter these secondary changes. However, they should be prominent if the interauricular septal defect is of importance.

**DR. F. J. HIRSCHBOECK:** The various congenital heart diseases are notoriously difficult to differentiate clinically. Interauricular septal defect is no exception to this rule and is rarely diagnosed before the necropsy. However, there are certain characteristics which may lead the careful examiner to the proper diagnosis. Abbott<sup>1</sup> felt that pallor of the skin, slender build, delayed puberty, mental retardation and rarely dwarfism and infantilism were to be explained as a result of the commonly associated hypoplasia of the aorta with decreased systemic circulation. The early and frequently severe enlargement of the right side of the heart may result in a precordial bulge. Cyanosis is not generally present until late (cya-

nose tardive). Hippocratic fingers are likewise late in their appearance or do not develop. According to Brown<sup>2</sup> the most characteristic signs are those due to dilatation of the pulmonary artery with forceful systolic pulsation against the chest wall accompanied by a diastolic shock, a systolic murmur and occasionally a thrill in the pulmonary area with an accentuated pulmonary second sound. A diastolic murmur due to pulmonary incompetence may be occasionally heard as in our case. The occurrence of thrills and murmurs according to Steigman and Putnam<sup>6</sup> are extremely variable and as a rule are of little diagnostic value. The frequently associated valvular deformities undoubtedly complicate the diagnosis in many instances. The frequent occurrence of auricular fibrillation is in contrast to its rarity in association with all of the other congenital cardiac anomalies. The electrocardiogram usually reveals a right axis deviation and occasionally the P waves may be large as the result of auricular hypertrophy. The roentgen evidence of a huge globular heart with a comparatively small aortic arch and a huge dilatation of the pulmonary artery and its branches far into the hilum of the lungs is undoubtedly the best evidence of an existing auricular septal defect. It is obvious the right ventricular enlargement might be mistaken for left-sided hypertrophy. However, the relatively small left auricle and the electrocardiogram may help in arriving at the proper diagnosis.

It should be noted that although the patients with auricular septal defects may be invalids, the great majority of those reported lead an active life and may experience multiple pregnancies and major surgical operations without showing ill effects. The average age at death is thirty-six years. The prognosis is about equal to that of coarctation of the aorta, less than that of interventricular septal defect and better than patency of the ductus arteriosus and pulmonary stenosis.

**Anatomical Diagnosis:** (1) Congenital interauricular septal defect; (2) hypertensive cardiovascular disease; (3) chronic congestive heart failure.

#### References

- Abbott, Maude E.: Congenital Heart Disease. Defects of the interauricular septum. New York: The American Heart Association, 1939.
- Brown, J. W.: Congenital Heart Disease. London: John Bale Medical Publications Ltd., 1939.
- Clawson, B. J.: Types of congenital heart diseases in 15,597 autopsies. *J. Lancet*, 64:134-136, (May) 1944.
- Patten, B. M.: Closure of foramen ovale. *Am. J. Anat.*, 48:19, (May) 1931.
- Roesler, H.: Interatrial septal defects. *Arch. Int. Med.*, 54: 339-380, 1934.
- Steigman, A. J., and Putnam, H. M.: Uncomplicated interatrial septal defect. *Am. J. Dis. Child.*, 62:1041-1045, 1941.
- Taussig, H. B., Harvey, A. M., and Folllis, Jr., R. H.: Clinical and pathological findings in interauricular septal defects. *Bull. Johns Hopkins Hosp.*, 63:61, 1938.
- Tinney, Jr., W. S.: Interauricular septal defect. *Arch. Int. Med.*, 66:807-815, 1940.

Men returning from combat areas who have been unfortunate enough to contract tuberculosis will not take kindly to hospitalization and other restrictions when their ambition for years has been a return to normal living. To provide proper treatment for these men as

well as protection for their families will be one of the difficult medical and social problems facing those responsible for tuberculosis control.—A. J. CHESLEY, M.D. and D. A. DUKELOW, M.D., Minnesota Department of Health.

## COARCTATION OF THE AORTA

KANO IKEDA, M.D.

Saint Paul, Minnesota

DR. L. A. ZAWORSKI: The case is that of a man, thirty-two years of age, who entered the hospital on January 26, 1945, with the chief complaint of dyspnea and wheezing. The patient believed he had asthma. He had been dyspneic for the past two years and during the past four or five months the dyspnea had become more severe. About the first of this year, his dyspnea became so severe that at times he was not able to lie down at night but had to sit up in a chair most of the night to ease his respiratory distress. He also stated that being out in the cold seemed to aggravate the dyspnea and made him cough. The patient also had been nauseated for the past month and usually vomited a half hour after eating. Brownish material frequently was present in the emesis. The patient had no particular food dyscrasia. He had lost 10 to 15 pounds since the latter part of December. He also stated that his ankles would swell at times. He was hospitalized at Ancker Hospital last summer for his wheezing. The patient was seen in the Wilder Dispensary on January 24, 1945, by the Resident who advised hospitalization.

The family history revealed the mother had diabetes. An uncle died of rheumatic carditis.

The past history revealed the patient had "pneumonia" two years ago and he believed his "asthma" began after this. He had measles as a child but denied any rheumatic infections, scarlet fever, diphtheria, pertussis, or mumps, as well as any luetic infection. Last summer he was hospitalized at Ancker Hospital for his swollen ankles and dyspnea.

Physical examination revealed a fairly well developed, poorly nourished, muscular, white male in moderate respiratory distress. Examination of the head and neck was negative except for poor oral hygiene, cyanotic lips, and rather marked carotid pulsations. The chest was not emphysematous but a striking feature was the marked bilateral subclavicular pulsations. Another prominent feature was the prominence of the veins along the lateral chest wall. The point of maximum apical impulse was in the ninth interspace in the midaxillary line. The pulse was 92 and blood pressure in the right arm was 170/80 and in the left arm was 166/80. There were both a systolic and a diastolic murmur at the aortic area, as well as at the apex. The lung fields were clear except for some moist râles in both bases, especially in the left lung. A systolic murmur was heard at the back, medial to the left scapula. The abdomen was negative except that the liver was palpable about three fingerbreadths below the costal margin. There was a Corrigan pulse but no capillary pulsation in the nail beds was seen. There was a 1+

pitting edema of the ankles. The blood pressure in the right leg was 94/80; in the left leg, 92/80.

Diagnostic impression was (1) aortic regurgitation with beginning decompensation, (2) cardiac hypertrophy, (3) possible gastric cancer.

DR. J. P. DAHLSTET: Digitalization was begun at once. The electrocardiogram showed a P-R interval of .24 seconds and a QRS of .12 seconds with T<sub>1</sub> inverted, T<sub>2</sub> and T<sub>3</sub> diphasic, and T<sub>4</sub> exaggerated. The diagnosis was left axis deviation with left bundle-branch block and myocardial changes.

Knowing that the patient had once been to Ancker Hospital, I called there for a résumé of his chart. The protocol received indicated that he had been followed at the outpatient department there since September 13, 1934, at which time he complained of loss of strength and shortness of breath of two years' duration. Examination at that time revealed the heart to be enlarged, with a loud systolic murmur at the apex transmitted to peripheral vessels and with a suggestion of an apical diastolic murmur. The blood pressure then was 180/80. The diagnosis at that time was rheumatic endocarditis, aortic insufficiency, and possible mitral stenosis. He was seen as an outpatient at Ancker Hospital at infrequent intervals until June 3, 1944, when he was hospitalized there because of marked dyspnea and edema of the ankles. The blood pressure again was 180/80 and the pulse rate was 95. There was a blowing early diastolic murmur over the precordium from the aortic area to the apex and a rough systolic murmur posteriorly in the left interscapular space. Roentgenograms of the chest revealed the heart to have a diameter of 23 cm. with moderate pulmonary congestion. The film showed scalloping of the right sixth and ninth ribs, both fourth ribs, and both fifth ribs. Re-examination of the films taken in September, 1934, revealed the same findings. An electrocardiogram on June 5, 1944, showed left bundle-branch block, myocardial damage, and first degree heart block. The patient was discharged from Ancker Hospital on June 26, 1944, with a diagnosis of possible coarctation, aortic regurgitation of possible congenital but probable rheumatic origin, generalized cardiac hypertrophy and dilatation, and myocardial insufficiency. His last visit to the Ancker outpatient department was on July 13, 1944.

Questioning of the patient's father and sister revealed nothing positive except that the patient, until about the age of twenty, had always been able to do hard manual labor, having worked on a construction gang and as a farmer, and had been able to keep up as well as the next fellow. As a child, the patient had always been well and strong but there was some question as to the possibility of rheumatism at about the age of fifteen.

As to the condition itself, White states that slight

From the Charles T. Miller Hospital, Saint Paul, Kano Ikeda, M.D., Pathologist.

grades of coarctation are not infrequent but high degrees are rare. There are, according to him, two types. The infantile type, which is very rare, consists of a narrowing of the whole aortic isthmus between the left subclavian and the ductus arteriosus. This type is incompatible with long life, the maximum reported being nine months with a mean of about eight hours. The adult type consists of a very localized constriction of the aorta at or usually just below the insertion of the ductus arteriosus. It is probably always a prenatal condition. In a few cases, the ductus remains patent but the most common associated anomaly is the bicuspid aortic valve; frequently the condition is uncomplicated. The anomaly is three times more frequent in males than in females and has been found to occur in more than one member of a family.

As a result of the obstruction to the blood flow distal to the origin of the left subclavian, there is often a consequent dilatation of the aortic arch with a progressive generalized cardiac hypertrophy and dilatation. The shunting of more blood cephalad accounts for the higher blood pressure in the arms and lower pressure in the legs. The establishment of a collateral circulation is attained by an anastomosis of the internal mammary veins with the intercostal, the epigastrics, and the subscapular arteries. The aorta may become markedly thinned above the coarctation and an aneurysm result which may rupture. Heart failure, however, is the most common complication, with rupture of the aorta next. Subacute bacterial endocarditis frequently develops and when it does, it frequently invades chiefly the area of coarctation. Cerebral complications sometimes develop either as a result of thrombosis or of cerebral hemorrhage. As to the treatment of the condition, there is no special treatment except to protect the patient from physical strain and from infections. For the differential diagnosis, always suspect coarctation in a case of hypertension in a young subject. A lowered blood pressure in the legs and the x-ray findings of scalloping of the ribs are important points in making the diagnosis as are prominent subscapular pulsations.

**DR. H. O. PETERSON:** The radiograph taken at Ancker Hospital in 1934 shows a typical left ventricular type of heart which is definitely large at this time and also shows very typical notched ribs which is diagnostic of this condition.

The radiograph taken at Ancker Hospital in January, 1944, shows tremendous increase in the size of the heart as compared with the film in 1934. The apex almost reaches out to the chest wall. One of the features of these cases is a small aortic shadow and this is a little difficult to understand. The scalloping of the ribs is due to increased pulsations in the intercostal vessels.

The lateral view, taken at Ancker Hospital, with barium in the esophagus, shows posterior displacement of the esophagus. The entire heart is enlarged and, therefore, there is bound to be some esophageal displacement with resultant aortic stenosis.

There is definite pulmonary congestion throughout both lungs through the hilar regions as would be expected with the size of the heart.

The radiograph taken in January, 1945, shows the

heart border to be now within 1 cm. of the lateral chest wall. The notching has not changed since the original film in 1934. The aortic shadow is still insignificant.

The kymogram shows excellent pulsations along the

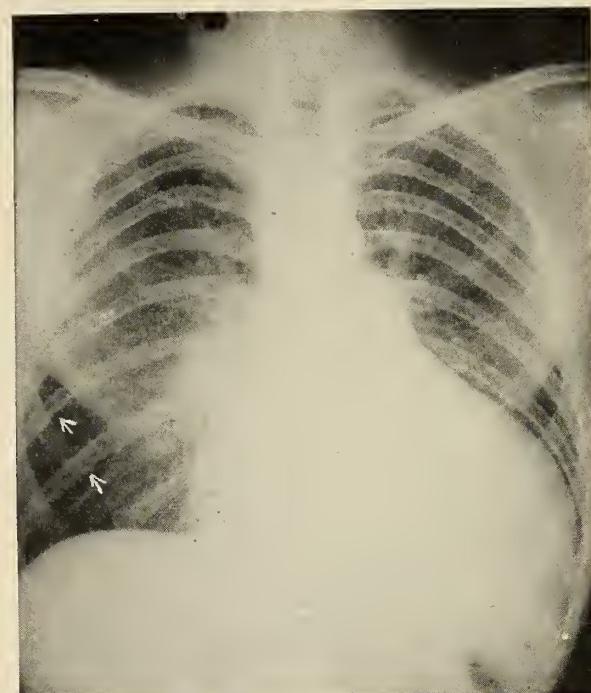


Fig. 1. The roentgenograms of the heart taken January, 1945, showing the enormous enlargement of the heart, a short and narrow arch and notching of a few ribs (arrow).

left border of the heart but they diminish along the apex to almost nothing. Up where the aorta is to be expected, pulsations are good. Along the descending aorta the pulsations are very weak.

#### Autopsy

**DR. KANO IKEDA:** While the body did not appear well nourished, it was quite muscular and athletic in type. There was moderate cyanosis of the face and neck. There was no edema. The superficial veins on the thoracic wall, especially on the left side, were somewhat prominent. The subcutaneous vessels were engorged and blood exuded freely. The internal mammary arteries were large and somewhat tortuous. They were 8 to 10 mm. in diameter near the origins and 4 mm. in diameter at the costal margins below. The intercostal arteries were dilated and tortuous and some of them lay in the rough grooves along the under surfaces of the ribs on the posterior aspects of the chest wall underneath the parietal pleura. The heart *in situ*, with the pericardium unopened, measured 22 cm. in transverse diameter. The heart with the arch and the entire length of the aorta weighed 1,410 gm.; the latter removed, it weighed 1,375 gm. The epicardial surface was stretched and shiny. All the chambers were dilated, especially the left ventricle. Both the right and left ventricles were enormously hypertrophied, the left being 3.5 to 4 cm. and

the right, 1 to 1.5 cm. in thickness. The myocardium was pale, grayish light brown in color, somewhat cloudy, and of rubbery firmness in consistency. The aortic orifice was guarded by two large cusps with slightly indurated,

stitial fibrosis. Chronic passive congestion of the liver and lungs was marked. Anatomical diagnoses were coarctation of the aorta (adult type), cardiac hypertrophy and dilatation (high degree), bicuspid aortic

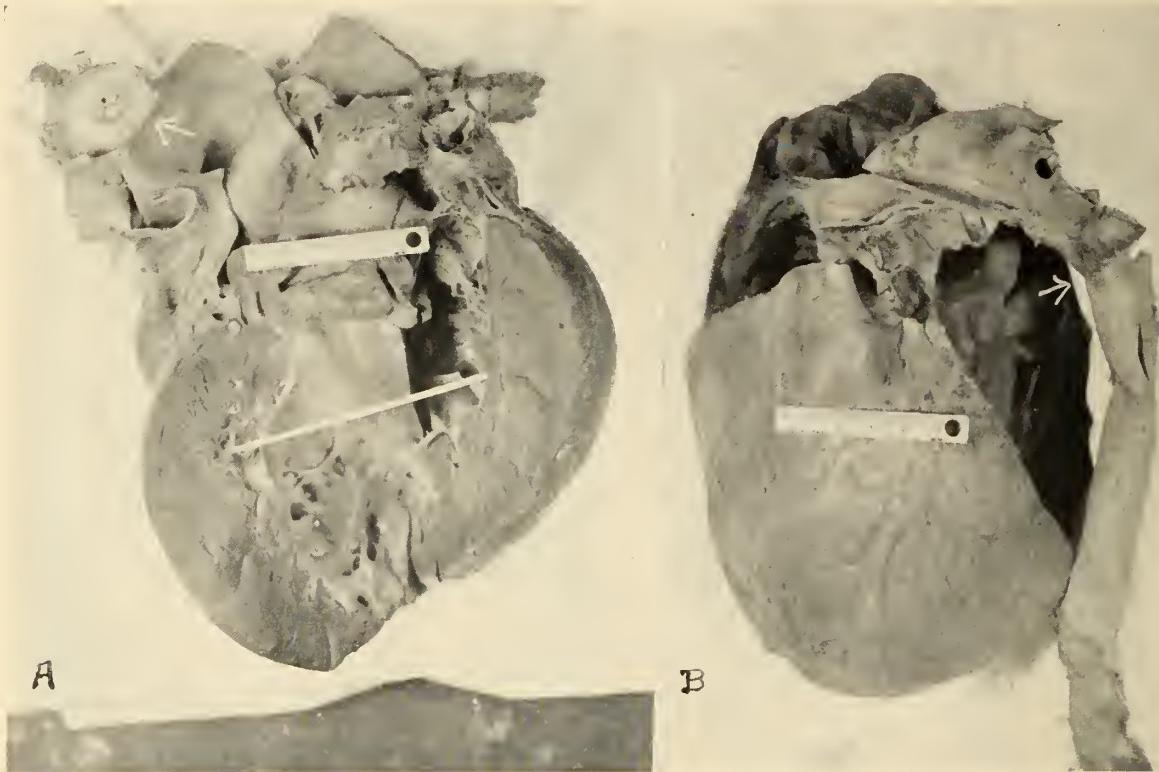


Fig. 2. A. The heart showing a marked hypertrophy of the left ventricle and an inside view of a fish-mouth constriction of the aortic arch (arrow). B. A posterior view of the heart with aorta showing an area of constriction (arrow) just below the left subclavian artery.

smooth, cord-like edges. The circumference of the mitral orifice was 14 cm.; that of the aortic, 8 cm.; the pulmonary, 11 cm.; and the tricuspid, 17 cm. The coronary arteries were dilated, the main trunks being 5 mm. in diameter. The root of the aorta showed diffuse, yellowish atheromatous streaks. The ascending portion of the aortic arch was definitely dilated, while the arch itself was reduced in size, being about 1.5 cm. in diameter. Just beyond the left subclavian artery, there was a definite constriction of the aorta. The over-all diameter of the constricted portion was about 1 cm. Here the wall was thickened and atherosomatous and the lumen narrowed down to about 3 mm. in diameter. It presented a fish-mouth appearance as viewed from above. The rest of the aorta was hypoplastic, the circumference of the aorta at the bifurcation being 3 cm. The lungs were congested and edematous. The pulmonary arteries appeared normal. The liver, weighing 2,100 gm., showed a typical nutmeg appearance, evidencing a high degree of chronic passive congestion. The aorta, besides being reduced in diameter, appeared somewhat reduced in thickness and more elastic, except in the ascending portion which was slightly dilated and atherosomatous. On the other hand, all the arterial trunks arising from the aorta appeared enlarged and more prominent. Microscopically, the myocardial fibers were hypertrophied and there was slight inter-

valve, and chronic passive congestion of the lungs and liver.

#### Discussion

DR. JOHN BRIGGS: This case was not recognized as a coarctation of the aorta at the time of the patient's first visit to Ancker Hospital in 1934. The predominant signs at the time were those of aortic insufficiency. There was good femoral pulsation present. On his last admission to the hospital in June, 1944, the aortic systolic and diastolic murmurs were present, and, in addition, the collateral circulation over the chest was marked. The blood pressure in the extremities was less than expected. The notching of the ribs was also marked. The findings on last admission led to the diagnosis of aortic insufficiency and obstruction to the aorta (coarctation-like syndrome) probably of congenital origin or congenital defects plus an associated rheumatic defect.

Coarctation of the aorta is not uncommon. The constriction occurs, as already stated, at or near the insertion of the ductus arteriosus and distal to the left subclavian artery. The circulation is maintained by the superior intercostal branches of the subclavians and the first intercostal within the chest; between the scapular branches of the subclavians and the upper aortic intercostals of the thoracic wall; and between the internal mammary arteries and the epigastric branches of the external iliacs in the abdominal wall.<sup>1</sup>

The mechanism producing the stenosis remains unknown. The infantile type of stenosis is prenatal, but the adult form is postnatal. Some observers believe that the constricting process in the ductus extends into the aorta, thus causing stenosis. Some believe that the defect occurs because of a congenital weakness in the aortic wall since the stenosis occurs where the three primitive arches meet. Dr. Sommers, in his discussion, reviews in detail Dr. Friedberg's excellent theory of the pathogenesis of coarctation.

Clinically, in some, coarctation may be latent and only found at autopsy. In others, it may manifest itself by signs of cardiac weakness, dyspnea, palpitation, etc. The throbbing vessels may be prominent and nosebleeds common. There may be complaints referable to the legs because of the inadequate circulation. On examination, one finds hypertension in the upper extremities with hypotension in the lower extremities. The forceful pulsating collateral circulation is easily seen. A systolic murmur may be heard over the base of the heart and a systolic thrill may also be present. The systolic murmur is heard characteristically over the back. The murmur of aortic insufficiency may also be present. The heart may be greatly enlarged.

By x-ray, the heart may be enlarged and often there is characteristic notching of the ribs. This is not always present. The aortic arch is often small and occasionally in the oblique view a constriction in the aorta may be seen.

The electrocardiogram is not characteristic.

The lesion of coarctation may be associated with other congenital defects such as bicuspid aortic valves, congenital cerebral aneurysms, et cetera. In addition, complications such as congestive failure, rheumatic endocarditis, subacute bacterial endocarditis, cerebral hemorrhage, or ruptured aorta are not uncommon.

The diagnosis should be suspected in any child with unexplained hypertension of systolic murmurs in atypical position. It is established by finding the typical notched ribs and hypertension, associated with lower-extremity hypotension.

The treatment is symptomatic. The lesion seems amenable to surgical resection. Whether such a procedure is of value remains to be proved.

**DR. BEN SOMMERS:** This is a most unusual case because of the marked cardiac hypertrophy. The heart is estimated to weigh 1,350 gm. In 1937, Golden and Brams<sup>2</sup> were able to find only thirty-eight cases of cardiac hypertrophy over 1,000 gm., and in 1944, one more was reported. Only six were in excess of 1,350 gm., making this heart the seventh weighing over that figure. It is still more remarkable in being the only case of coarctation of the aorta in the entire group.

In regard to the theories of pathogenesis which Dr. Briggs described, the latest and in many ways, the most plausible one was recently reported by Charles Friedberg.<sup>2</sup> In the fetus, the aortic arch is divided into an upper and a lower segment by the isthmus, that short segment between the left subclavian artery and the ductus arteriosus. Direct observation of radio-opaque material injected into the inferior vena cava of sheep's fetus revealed the material to pass directly through the foramen ovale into the left heart and aorta, thence into the

carotids and subclavians. Little blood was seen to pass through the isthmus into the lower segment. By the same method, most of the material injected into the superior vena cava passed through the right heart, pulmonary artery, and ductus arteriosus into the lower aortic segment. Friedberg's theory presupposes either a hypoplasia of the aorta or more rarely a constricted area or anomalous vessel in the upper aortic segment as the basic congenital anomaly in coarctation of the aorta. At birth, the drop in pressure in the ductus as the pulmonary arterial blood passes into the pulmonary arteries, causes closure of the ductus through the contraction of its strong circular muscle fibers. Hypoplasia of the aorta lowers the pressure in the isthmus even more than in the normal, and coarctation develops in the same way.

This theory explains the fact that coarctation of the aorta, occurring after birth, is never found in the fetus. It also accounts for the location of the adult coarctation at or below the opening of the ductus. As development proceeds, the tremendous pressure in the arch of the aorta causes dilatation of this congenitally hypoplastic, weak vessel, accounting for the frequent occurrence of aortic rupture in these cases.

**DR. C. B. DRAKE:** The narrowing of the aorta in coarctation cases, of course, causes a lower than normal blood pressure in the lower extremities. The higher than normal blood pressure in the upper part of the body can be explained as an effort on the part of nature to supply more blood to the lower part of the body. Nature shows an apparently intelligent response in adjusting circulation to the mechanical abnormality in coarctation as in the case of aortic regurgitation by an increase in blood pressure.

The blood pressure in the lower extremities is normally 20 or 30 mm. of mercury higher than in the arms even when the subject is in the recumbent position. This can be explained by the laws of hydrodynamics. The fluid pressure as indicated by the level of fluid in a piezometer tube at right angles to a tube in which a fluid is flowing, is unaffected by the velocity of the stream. However, if a piezometer tube is inserted into the tube in which the stream is flowing at an acute angle in the direction of the stream the pressure in such a piezometer tube is affected by velocity and is increased. Thus, the arteries which arise from the aorta do so at right angles to the aorta and the blood pressure in the radials is essentially the same as in the aorta. In the femoral arteries, however, the situation corresponds to the piezometer tube at an angle to the main stream and the blood pressure is increased because of the velocity factor. Blood velocity is increased in aortic regurgitation and this accounts for the abnormally high blood pressure readings in the lower extremities in such cases.

**DR. HERMAN WOLFF:** Diagnosis cannot be made by laboratory technique but instead requires clinical knowledge and instinct. While the changes in the femoral vessels may or may not be present, I think that any hypertension occurring in a young adult should have a possible diagnosis of coarctation of the aorta.

**DR. C. N. HENSEL:** For twenty-two years, the patient had a moderate enlargement of the heart. Then, after

(Continued on Page 316)

## HISTORY OF MEDICINE IN MINNESOTA

### HISTORY OF MEDICINE IN GOODHUE COUNTY

*(Continued from March issue)*

In 1886 the regular physicians of Goodhue county apparently started a drive to prosecute men who were not physicians but who advertised themselves as such. In July, two such cases were recorded in the newspapers. A man by the name of B. M. Behrens of Chicago was prosecuted by petition of O. H. Hall, O. K. Hall, H. L. McKinstry, E. H. Tupper and O. K. Lindboe for practicing medicine contrary to the state law. The law required a man to go before a state medical board and secure a certificate before he was granted the right to practice.<sup>10</sup> This man, who had signed his prescriptions "M.D.," had been heralded by posters announcing that he was a specialist in treatments of lung, throat disease, catarrh, etc. He had treated several cases of throat trouble and indigestion. He was held on a \$500 bond to appear before the grand jury. The other case was that of one C. N. Nelson, apparently a regular physician<sup>11</sup>, who by complaint of Drs. Jaehnig, Jones, Leiminger, W. M. Sweeney and Magelssen was arrested for practicing medicine in Red Wing without complying with the conditions of the law. He pleaded guilty to the charge and was held on \$500 bond to appear before the grand jury. Several months later Nelson is mentioned as having appeared as a witness for the state in a poisoning case.

#### 1890-1900

During the nineties there was what might be called a continued epidemic of diphtheria. The disease appeared in all parts of the county and, in some years, the number of cases assumed an alarming proportion. The first three years apparently were the worst. In 1891 the schools in West Red Wing and Ellsworth were closed, and there were bad cases in Cannon Falls, where Dr. H. E. Conley's two children died of it. We have the following statistics for Red Wing during the fall of 1893. At this time the population of the city was about 6,400. Twenty-one children died of diphtheria, six before school opened, and seven of the fatal cases were below school age. During September the schools were closed for about ten days, during which time twelve more cases developed. By the middle of October there were ten more, making a total of thirty-three families under quarantine. By November, however, all but eight of these cases were reported as convalescent. Diphtheria continued to reappear in the surrounding towns through the following years and the schools were closed at intervals. The late summer of 1895 saw nearly four dozen cases in the little town of Hay Creek alone. It again reached serious proportions in 1898. These statistics are interesting in comparison with the present-day control of the disease.

Diphtheria antitoxin was coming into use toward the end of this period. M. H. Cremer and L. E. Claydon of Mazeppa in Wabasha County were the first to use it in Southern Minnesota. In June, 1895, they used it for a large number of cases in Zumbrota, Goodhue and Belvidere townships, all in Goodhue County.

Influenza was also common at this time. It was most general during the first few years of the decade and again in 1899.

10. The state law requiring this certificate was passed in 1883. Exemption from the requirement was based on a testimonial of five years' practice prior to that date.

11. According to Dr. H. P. Sawyer, of Goodhue County.

Measles assumed epidemic proportions in some localities of the county in 1890. The last four years of the decade also saw epidemics of measles, there being, in the winter of 1897, forty cases in the Minnesota State Training School alone.

Three fatal cases of typhoid were reported in Cannon Falls in the winter of 1891 and inmates of the orphans' home at Vasa suffered from the disease in 1898. The following year Kenyon was the scene of a few scattered cases. A mild run of scarlet fever was experienced in Red Wing in 1891. With the exception of whooping cough and chicken pox, which struck Goodhue town almost at the same time early in the summer of 1895, this concludes a report on epidemics. Dr. H. L. McKinstry, the health officer for Red Wing, reported that in the year 1895 there were ninety-one deaths in the city, of which five were from contagious diseases, making the death rate eight-tenths of one per cent. During the same year the number of births totaled one hundred and seventy-two.

It is worth mentioning that in spite of the heavy mortality from diphtheria and the prevalence of measles, other diseases were less common during the ten-year period. No mention appeared in the newspapers of smallpox or malaria, both of which had troubled the county in preceding years.

The men who served as county physicians during the decade were: Bruno Jaehnig, J. V. Anderson, A. T. Conley, H. E. Conley, J. C. Gronvold, George Overholt, E. A. Tupper, O. I. Hall, O. H. Hall, Charles Hill, Otis J. Brown, George C. Wellner, Galen Allen, P. E. Jones, Charles M. Beebe, Seth E. Howard, W. L. Craddock, H. P. Sawyer, K. Gryttenholm, and C. E. Wing.

The districts for which these physicians were elected were: Red Wing, the first district; Cannon Falls, the second; Kenyon town and village and Cherry Grove, the third; Warsaw, Wanamingo and Holden, the fourth; Zumbrota town and village, Minneola and Belle Creek, the fifth; Pine Island and Roscoe, the sixth; and Goodhue and Belvidere, the last. The third and fourth and the fifth and sixth, as here listed, were often combined, making five in all. The salaries varied somewhat depending on whether or not bidding was allowed. These are the figures for the year 1894 for the divisions enumerated above, respectively: \$400, \$220, \$72, \$120, \$100, \$100 and \$50.

An idea of the work connected with being a physician for the county may be gained from the following report made by J. V. Anderson in 1897, physician for the first district. As county physician during that year, he traveled 220 miles in the country, made 175 visits in the city and 20 to the county poor farm and held 175 office consultations. The money value of the preceding services he estimated at \$657.50. The amount he received was \$450.

Hospital facilities were enlarged and improved. In 1890 the county hospital was moved from its site at Red Wing to a site near the newly finished county almshouse. The building formerly used for the county hospital was then turned over gratis to the city of Red Wing for a city hospital. In return, county patients were to be received at the rate of one dollar per day. A group of Red Wing women assumed the business management of the hospital and contributed \$700 to its support. After that, the city made regular appropriations. The association, which was incorporated in 1891, had as its officers, Mrs. S. B. Foot, president; Mrs. T. B. Sheldon, first vice president; Mrs. C. F. Smith, second vice president; Mrs. B. Densmore, secretary; and Mrs. T. K. Simmons, treasurer. There was also an executive board of five members. During its first year the total receipts from private contributors and city appropriations totaled \$1,603.67 and the expenses totaled \$1,061.24. There were accommodations for about ten patients. In 1896 the hospital association was reorganized<sup>12</sup> and a search was made for a more suitable

<sup>12</sup>. The officers were: E. H. Blodgett, president; Mrs. S. B. Foot, first vice president; Ed Johnson, second vice president; C. A. Betcher, secretary; Fred Busch, treasurer.

## HISTORY OF MEDICINE IN MINNESOTA

building for the growing institution. Eventually, the thirteen-room home of General S. P. Jennison on College Bluff was chosen. Additions and improvements were made. Six rooms were given over to the patients; two of these were private and the rest had several beds. No beds were set aside, however, for contagious diseases.

A study of the city hospital reports for four different years during the nineties shows that the total expenses of the hospital averaged about \$1,360 per year and the receipts about \$1,590. Of the total number cared for each year, more than one half were pay patients. The majority of the remainder were patients for whom the county contributed a small amount.

In 1897 a meeting was held in Zumbrota and a committee was appointed to consider the possibility of establishing a Lutheran hospital there. Zumbrota was chosen because of its central location in the county. Necessary funds were raised by the selling of nonassessable and nontransferable membership certificates which entitled the holder, other things being equal, to preference in admission to the hospital. Lutheran ministers in and about Zumbrota were to be honorary members. Other funds and property were obtained by gifts, grants, or purchase. Business affairs of the corporation were put in the hands of a board of trustees.<sup>13</sup>

The hospital, when finally completed, was a three-story building with twenty-five rooms. Space was provided for twenty-five patients without crowding. The structure was erected at a cost of about ten thousand dollars and was one of the finest in the state at that time. K. E. Gryttenholm and H. E. Bakke were the local physicians on the staff, and Eduard Boeckmann of St. Paul was the chief consulting physician.

The medical profession lost a number of important members between 1890 and the end of the century: W. G. N. Tupper (1890), John Beauford and John Kelly (1891), all old residents, M. Magelssen (1895), R. Frettheim (1899) and Galen Allen (1900). Especially to be noted is the death of Just Christian Gronvold (1895), who was one of the outstanding physicians of Goodhue county in public favor as well as in his practice. Dr. Gronvold, who was born in Norway, had been for a time an instructor in mathematics at Sylom's Polytechnical school in Christiania, and had spent several years as a surveyor and as an engineer before coming to the United States. He graduated with high honors from the Humboldt Medical College in St. Louis. His knowledge of scientific and historical matters was remarkably wide and thorough, and, as a man, he won the regard of all who came in contact with him. His practice was a large one but at the time of his sudden death from pneumonia he had accumulated little of the world's goods. A large group of friends and acquaintances showed their appreciation for his services by erecting a monument over his grave.

In 1890 there were about thirty physicians in Goodhue County, many of whom were well established. The total number of physicians in the county, at any given time, did not noticeably change during the next ten years, although in the course of that time, about thirty new men moved in. Among them were several osteopaths, the first in Goodhue county. The number of physicians in relation to the population of the county is interesting. In 1890 the official population was 28,806; in 1895 it was 32,268. In other words, there was approximately one physician for every one thousand persons.<sup>14</sup>

13. The first board of trustees was composed of: Rev. L. M. Bjorn, O. O. Nordvold, A. J. Rockne and R. O. Lund of Zumbrota; Rev. B. J. Muus, Holden; Rev. Carl Melby, Leon; Rev. George Lahme, Pine Island; Rev. C. Bender and Rev. K. Bjorge of Red Wing.

14. The following figures give an idea of the growth of the population of the county:

Year	Population	Year	Population	Year	Population
1860	8,977	1870	22,618	1890	28,806
1865	14,830	1875	28,500	1895	32,268
		1880	29,651		

**Biographical Dictionary**

**Galen Allen**, a homeopath, graduated from the medical school of Boston University in 1875. He practiced in Red Wing until his death in 1900 with the exception of a short while toward the end of the seventies. He served several years as county physician.

**J. V. Anderson** was born in Sweden about 1860. He graduated from the Rush Medical College in 1886 and the same year he came to Kenyon, Goodhue County. A few years later he moved to Red Wing, where he at first officed with Dr. Jaehnig. He served on the pension board, as city health officer and as county physician for several years. He was a member of the United States Board of Examining Surgeons and for a time he was the medical director of the Scandinavian Relief Association. He was elected a member (1887) of the Minnesota State Medical Association and served as president of the Goodhue County Medical Society. Dr. Anderson died in 1942 after more than fifty years of practice in the county.

**A. W. M. Acharius** established himself in Red Wing about 1865. He was not successful in making a living, and he blamed his difficulties on the large number of advertising quacks. In about 1870 he returned to Sweden where he was given an office by the king.

**Isaac Babcock** is listed as a Red Wing Physician in 1890.

**E. D. Baker** practiced near and in Red Wing in the seventies.

**Nathan M. Baker** received his medical degree in 1889 from the University of Pennsylvania where he ranked second in a class of 140. In 1890 he returned to Red Wing, where he had previously been employed as a chemist in the office of the State Board of Health. Shortly afterwards he went to Rochester and then, for two years, served as superintendent for the insane asylum at St. Peter. (See the History of Nicollet County).

**H. E. Bakke** graduated from the University of Christiania, Norway, and located at Red Wing for a short time and then moved to Kenyon in 1898 where he practiced until his death.

**E. M. Bangs** came to Red Wing in 1879 from the Homeopathic Hospital, Wards Island, New York, and stayed for about a year moving, then, to Fargo, North Dakota.

**R. C. Banks** (See Steele County Biographies).

**John H. Beaufort** was born in 1837. He studied at Evanston, Indiana, in 1869, and, three years later, obtained the degree of Doctor of Medicine at St. Louis. In 1875 he moved to Red Wing and the next year to Hay Creek. In June, 1891, he lost a leg under a freight car at La Crosse and died of the injuries a few weeks later.

**C. M. Beebe** began his practice in Zumbrota in 1882.

**Mrs. C. A. Bennett** established a practice in Red Wing in 1876.

**E. C. Bolander**, a pharmacist and physician, was born in Sweden in 1829. He came to Red Wing about 1860, or a little earlier, and here he ran a drug store and practiced medicine at the same time. He was found dead in his office in July, 1885, apparently from an accidental overdose of morphine which he was in the habit of taking. He left a family of six unusually interesting and intelligent children. His wife had died eighteen months before.

**G. Wendell Bothwell** practiced in Pine Island and then in Red Wing about 1874.

*(To be continued in May issue)*

# President's Letter

## The Annual Meeting

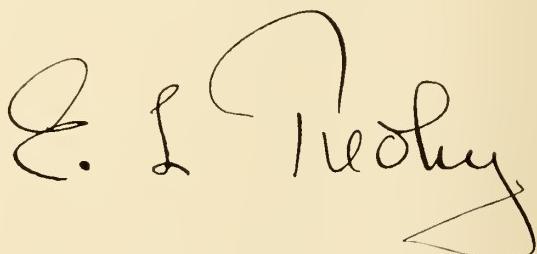
It is now known through a ruling from Washington and notice sent to our Executive Secretary, R. R. Rosell, that a postponement of our annual meeting is decreed. Those asked to participate in the scientific session are respectfully urged to hold their assignments and continue their preparations; because military developments of the next few months may lessen transportation and hotel loads and we may be able to have the program in Saint Paul in the fall as planned. In the meantime, the Council has decided to hold the House of Delegates' meeting in Saint Paul on May 19 and 20, as usual.

## The Trend of Medical Legislation

At this writing, the Minnesota session of the legislature is at the half-way mark. From now on that active body will deliberate over many hundreds of bills in toilsome study. Committees must digest the purposes, contents and desirability of each measure. Yes, they must also look for every possible "Ethiopian" in the wood derivative known as news print. To the appropriations committees in both houses came the added necessity of financial pruning of the taxation tree lest it grow to such political proportions as to shade the members excessively from the sun of suffragal approval. This is a delicate hint at the power of votes where people are really permitted their use and their counting.

The medical profession has been dealt with fairly by our Minnesota legislatures. We pride ourselves upon a record of asking only for that fairness of treatment and judgment that stems from the certainty that we know what is medically right, just and workable for all our citizens. Our Prepayment Medical Insurance bill is presently attacked by certain well-meaning co-operatives and a few insurance companies. It seems certain that these critics will be satisfied when they understand what we plan to do; and if they fully study what has been accomplished in other states (notably Michigan) by the method. We simply ask that a doctor be permitted to carry out and direct that which is obviously a medical objective.

We hope the legislature will give our University and other state educational institutions the support they deserve. Most of all, are we interested in the successful maturing of the plans to add the Mayo Memorial to the technical and research facilities of the University Hospital? Our profession is heartedly enlisted in the statewide appeal to collect the million dollars to match a like amount granted by the legislature. This epochal development will go far to keep Minnesota the leading center for medical research and teaching (graduate and undergraduate) in America.

A large, handwritten signature in black ink, appearing to read "E. L. Murphy". The signature is fluid and cursive, with a prominent "E" and "L" at the beginning.

President, Minnesota State Medical Association.

# Editorial

CARL B. DRAKE, M.D., *Editor*; GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

## THE NEW WAGNER BILL ANALYZED

THE following editorial appeared in *The Labor Union*, a weekly labor newspaper with a circulation of about 150,000, owned and published in Dayton, Ohio, by local unions affiliated with the American Federation of Labor. The newspaper is not owned by individuals and its executives are elected by the local unions. Thus the opinions expressed are undoubtedly those of local labor unions. The editorial was sent us by the National Physicians Committee for the Extension of Medical Service, and is being reproduced *in toto*, for it contains a more keen analysis of the issues involved in the new Wagner Bill than we could possibly make. The editorial is the most startling in that we had been given to understand that labor wholeheartedly favored bureaucratic medicine.

### The Labor Viewpoint

Dangerous legislation. . . .

Some of it is dangerous to one class of individuals and some of it is dangerous to another group, but now here comes proposed legislation which is dangerous to all alike.

This is legislation which editorial writers the country over are opposing, and while there are a few good features in the new Wagner Bill—aimed at socializing medicine—few if any of the leading writers can find sufficient good in the Bill to commend it to the public.

"It is doubtful if any legislation has been proposed for Congress that is quite as vicious and deceptive, or that could be more destructive of both human freedom and human self-respect than the new social security bill offered by Senator Robert F. Wagner, of New York City," says an editorial in the Shreveport (La.) *Times*.

The *Times* editorial points out that the purpose of this Senate Bill 1161 is its use as a means of enacting into federal law the proposal of President Roosevelt for expansion of that phase of bureaucratic activity of the government.

\* \* \*

The bill would add \$12,000,000,000 a year to the taxes of the public, with one-half of it placed directly on the payroll workers.

Under the present system of handling social security that tax money would be available for any government spending, which would mean that in the future years new taxes would have to be imposed to pay the obligations of the social security taxes spent for other purposes.

Actually such programs form one gigantic steal of the citizen's money as well as of his decency, liberty and self-respect.

The bureaucrats insist their political medicine is to build up public health when all it could do would be to build up the politicians and their power.

It is simply one of many similar steps to destroy initiative in one group as similar steps are taken with other groups.

If the medical profession can be destroyed, so can the legal profession, engineering, school teaching, or any other.

There is no problem so needing solution as that of top-grade medical attention for those who cannot pay top prices.

But taxing the workers thousands of dollars to be spent by some medical dictator set up by bureaucrats is no solution.

\* \* \*

At a time when medical science is performing seeming miracles in the discovery and application of new healing agents and operating techniques, and while thousands of American doctors are away in the armed forces serving America and all mankind, along comes this proposal to socialize medicine, as part of a broad scheme to provide "security" for the general public.

The Constitution of the United States gives every man the right to "his day in court," before he can be "counted out" of circulation with his fellow men, although he may be known to be a criminal. But is the medical profession of America being given its "day in court?"

Those members of the medical profession who are risking their own lives on the far-flung battle front of the world in behalf of your fathers, sons or sweethearts—yes, and of thousands and thousands of the womanhood of America, since women are now in every branch of the service—do not have the time nor opportunity to protect themselves from this "stab-in-the-back," which the Wagner Bill undoubtedly is.

\* \* \*

The small force of physicians and doctors left in the United States to look after all the millions of war workers and to try to keep the nation in as healthy a condition as possible, are little if any better off than those outside our shores with regards to time to look after their own welfare and the protection of their profession.

Thus it behooves every worker to do all possible to protect his own interests and those of his doctor by fighting this dangerous Wagner Bill, which is Senate Bill 1161. Let your Senator and Representative in Congress know that you want this bill defeated.

What this plan proposed for the United States is

## EDITORIAL

exactly what Mussolini tried for Italy and what Hitler has been trying to put over in Germany.

What the Congressmen backing this plan are asking the free people of the United States to do is to follow the course that helped put Italy into Mussolini's slavery and then destroyed the people of the nation.

It is a potential final spearhead by which bureaucracy could destroy democracy, freedom and self-respect among American people as a whole.

\* \* \*

What this medical proposal really means is the abandoning of the private practice of medicine and in the end placing medical aid, care and attention under politically selected and approved doctors, druggists, nurses and hospitals.

The right of the citizen to pick his own doctor would be wiped out in the end.

Of course the bill does not in so many words abolish private medical practice as such.

But it makes private medical practice impossible economically, and undesirable from any standpoint.

Under this plan, the American citizen would find that whenever sickness came he would be herded before federal doctors, in federal clinics or federal hospitals, and given mass federal treatment.

Instead of improved public health, such a plan could only in the end destroy it.

Instead of profiting through "government-paid" medical attention, the citizen would find himself a political pauper from the standpoint of health, paying in taxes perhaps \$100 for every \$25 worth of so-called "service" received.

\* \* \*

What the American public, and particularly the laboring class, should clearly understand is that this plan is not simply a blow aimed at the medical profession, but part of a huge armored force attack which is battering the whole front of freedom, initiative, enterprise, liberty and self-respect for all of the American people.

Fascism, dictatorship, Nazism, Communism or any other "ism" could not come into the United States by one fell swoop—by any overnight governmental action.

Designers of such radical governmental changes move slowly with caution; they build their house stone by stone so that no one step attracts too much attention.

Suddenly it is found that an entire new structure is completed.

It is too late then for Liberty and Freedom to act.

Every step taken, every stone laid, was done in the guise of "helping" some citizen group, of putting money into its pocket, or of making unnecessary the removal of money.

### THREE MINOR SIGNS IN PHYSICAL DIAGNOSIS

THE following signs have proved of value in confirming a diagnosis and in arriving at a somatic conclusion concerning the patient.

The first is the position of the pupil in the iris. I am speaking of normal eyes. For many

years I have noted the position of the pupils, whether they are excentric to the periphery of the iris. This excentricity is usually in one eye, although at times it is bilateral. My impression is that this excentric pupil is a stigma. These people are, biologically speaking, inadequate. Patients with this type of pupil are more susceptible to morbidity. One sees this type of pupil in patients with rather severe diseases, such as lymphoblastomata, blood dyscrasias, carcinomata, et cetera. No statistical studies have been made to verify this impression. However, after years of observation this impression is so strong, that I have the temerity to put into print.

Another eye sign I have noticed is the reverse Von Graefe. In the Von Graefe sign the upper lid lags as the eye turns down. In the reverse Von Graefe sign the upper lid travels faster than the eye when looking up. This sign is usually found in people who are recovering from a severe illness, such as, pneumonia, typhoid or other infectious processes. It is also found in people with neuroses. Without a history of debilitating disease, it is a diagnostic sign of psychic disturbance. I realize either signs, the Von Graefe or its reverse, are evidence of autonomic imbalance. However, it is never seen in thyrotoxicosis.

The third item of interest is again confined to the head. Every now and then the question of atrophy of the mucosa of the tongue arises. Often a normal mucosa of the tongue suggests atrophy because the rugae are flattened out. Rubbing the tongue vigorously with a tongue blade makes them stand up, if they are present; if atrophied, no reaction occurs.

HENRY L. ULRICH

### IMMUNE SERUM GLOBULIN AND MEASLES

THE American Red Cross has recently announced that it is about to distribute immune serum globulin through the State Departments of Health for the modification and prevention of measles. The product is a concentrate derived from the blood donated by citizens through the blood centers and will be given free to the public as long as the supply holds out.

Sufficient clinical trial\* of the use of immune serum globulin has been made to indicate its value. In children, an intramuscular injection

\*Janeway, C. A.: Clinical use of products of human plasma fractionation. J.A.M.A., 126:674, (Nov. 11) 1944.

of 0.08 to 0.1 c.c. per pound of body weight, given as soon as possible after exposure, and at least within seven days of exposure, will be fairly effective in preventing the development of measles. A smaller dose, 0.02 to 0.025 c.c. per pound of body weight, given about five days following exposure, will be quite effective in modifying the attack.

The larger dose, given early, prevents an attack of measles in about 80 per cent of cases and produces an immunity which lasts about three weeks. The smaller dose modifies the symptoms of the disease and definitely lessens the likelihood of complications. Whether a modified attack results in a lasting immunity has not been demonstrated.

Severe reactions from the injections do not occur. In one series some local soreness and a little fever resulted in 1.7 per cent of 1,834 injections.

The globulin at present is not recommended for the treatment of measles. The dosage for adults has not been determined. A 5 c.c. dose to an adolescent does not protect for a period longer than six or eight weeks. Globulin injections should be particularly valuable in the prevention and modification of measles in pediatric wards and in young children exposed to the disease.

While the mortality rate in measles is not high, the large number of cases each year results in a considerable number of complications and deaths. In Minnesota last year, for instance, there were 22,454 reported cases of measles and sixty-four deaths. The figures for 1935 and 1939 were much the same. So far this year, the reported cases are fewer than last year. Of the sixty-four deaths last year, fifteen were in infants under one year, thirty-eight under five years, and seventeen between the ages of five and nine. That 56 per cent of the deaths occurred under the age of five indicates the age period in which treatment with immune serum globulin is especially indicated.

#### EXPERIMENTAL ORTHOPEDIC FOOTWEAR CLINIC

Anticipating the need for special footwear for soldiers returning from overseas with foot injuries, the Office of the Quartermaster General, in co-operation with the Office of the Surgeon General, has authorized an experimental cast-making unit and orthopedic footwear clinic at the Boston Quartermaster Depot. Accurate casts will be made of deformed feet, and permanent metal molds will be fashioned from these casts. The wooden lasts on which the shoes are built are made

## In Memoriam

### ARTHUR EDWARD SMITH

Dr. Arthur Edward Smith of Minneapolis died at Northwestern Hospital on February 16, 1945, at the age of sixty-five.

He practiced as a physician and surgeon in Minneapolis for thirty-one years and was a member of the staff at Northwestern Hospital. He also served as chief oculist for the Soo Railroad.

Dr. Smith was born in Milwaukee, Wisconsin. He attended the University of Minnesota Medical School and received his medical degree in 1905. He was an intern at Northwestern Hospital from 1906 to 1908 and later took his postgraduate work at the Kruckmann Clinic in Berlin, Germany, and the Dimmer Clinic in Vienna, Austria, receiving his certificate in 1933.

In 1915, he was married to Florence Anderson, who survives him.

Dr. Smith was a fellow of the American College of Surgeons, a member of the American Medical Association, Hennepin County Medical Society, Minnesota Academy of Medicine, American Academy of Ophthalmology and Otolaryngology and the American Association of Railway Surgeons. He was also a member of the Sons of the American Revolution, Sigma Alpha Epsilon Fraternity, the Scottish Rite, and the Minneapolis and Minikahda Clubs.

### THORVALD VAALE

Dr. Thorvald Vaaler of Cannon Falls died December 24, 1944, at the age of fifty.

Dr. Vaaler was born at Fosston, Minnesota, October 26, 1894. He received his B.A. degree from Luther College, Decorah, Iowa, in 1919 and his M.D. from the University of Minnesota in 1925.

After interning at the Swedish Hospital, Minneapolis, he began practice at Detroit Lakes. A year later he moved to Rochester where he practiced for two years. He had been in Cannon Falls for the past fifteen years where he had been city health officer and local surgeon for the Chicago Great Western Railway.

Dr. Vaaler was a member of the Goodhue County Medical Society, the Minnesota State and American Medical Associations.

from these molds. Casts, molds, lasts and patterns will be marked with the name and serial number of the soldier and held at the depot. Thus, through his Veterans Bureau, the injured man will be able to obtain the special shoes as long as he needs them. The plan calls for the establishment of similar clinics in each service command in the United States.—J.A.M.A., 127: 926, (Apr. 7) 1945.

# MEDICAL ECONOMICS

Edited by the Committee on Medical Economics

of the

Minnesota State Medical Association

George Earl, M.D., Chairman

## COUNTY OFFICERS DISCUSS RURAL HEALTH PROBLEMS

That an earnest attempt is being made to weave the economic and the professional threads in the field of medicine together into a pattern of decisive action was demonstrated throughout the entire deliberations of the County Officers' conference last month in Saint Paul. The careful thought that was given to postwar planning, with special emphasis on rural planning, would seem to be a splendid index of the realistic attitude the doctors here are taking.

It was quite evident from the various phases of the subject discussed, which embraced doctors, hospitals, nurses, diagnostic centers, prepayment plans and public health, that the medical profession is cognizant of the fact that the problem of securing adequate medical care in rural areas is pressing, and that solution can come about only through proper and prompt remedial planning.

Four main elements entered into the discussions: (1) getting and keeping physicians in rural areas, which is closely related to (2) providing more and better hospital and clinical facilities, (3) providing a better method of payment for medical services than exists at present and (4) improving public health services.

### Rural Practice Must Be Made More Attractive

That the need is urgent for keeping physicians in rural districts, and attracting new ones, particularly during the coming period of medical demobilization, was stressed by Dr. B. O. Mork, Jr., of Worthington who called attention to the fact, that during the war the number of physicians in the state has been reduced by more than one-third. Although proportionately more of these have come from urban than rural areas, he said, their responses to questionnaires sent out

indicate that while 99 per cent are planning to return to private practice after the war, the substantial majority of them are looking for residencies and postgraduate training that will equip them to practice in the specialties. On the very face of that, the status quo in the rural districts will not be helped.

"Lack of adequate facilities," Dr. Mork said, "so essential to giving the kind of care we desire, discourages many physicians from practicing in rural areas. Medical students are trained in well-equipped hospitals, taught to use many types of diagnostic and therapeutic equipment. They do not want to locate in areas where these are not available; yet often they are unable to provide them for themselves. Community and other well-run hospitals are essential, strategically located, properly staffed and equipped and providing a maximum of facilities for all reputable physicians in the area."

### "We Have a Responsibility"

Dr. Mork probably sounded the keynote of the entire session in his concluding remarks:

". . . let us not forget that we have a responsibility in the great problem of adequate distribution of physicians to provide the best medical care to people of all districts, rural and urban in the postwar period. Every medical group should survey its own area carefully to determine its needs. In order to bring about conditions to encourage the practice of the best type of medicine, we should co-operate with all other interested groups to provide adequate hospitals, diagnostic centers, public health units, and other facilities, and to promote the widest possible use of those already existing. We should maintain keen interest in the further extension and development of prepayment and voluntary service plans for hospital and medical care. We must be ready to make changes, if necessary, to meet changing needs of people in our areas."

### Diagnostic Centers

From Dr. A. H. Zachman of Melrose came a word of warning relative to the method of estab-

lishment of diagnostic centers. Said Dr. Zachman:

"It is the inviolable right and duty of the medical profession as guardians of public health to insist that such centers, if established, be free of any political control or interference. They must be strategically located, must not tend to centralize medical practice and thereby hamper the initiative of those doctors who are willing to establish themselves in the more remote and less alluring and less remunerative rural areas. Otherwise, the primary purpose of such medical reform would prove to be a boomerang and would be self-destructive."

### Nursing Needs in Rural and Small City Hospitals

A two-year nurse training course was advocated to supply the nursing needs, especially of the rural and small city hospitals in the state, by Dr. B. C. Ford, of Marshall.

Quoting Dr. Ford:

"A college degree is not an essential prerequisite for a good nurse. The art of making a patient and his family comfortable can be learned by any intelligent girl in two years, providing there is adequate supervision. That kind of training will take care of the needs of the vast majority of the great middle class who are neither rich nor poor but who cannot afford to pay for more expensively trained nursing care."

That some standard training course be recommended for general use through the state, and that a committee of operating doctors and superintendents of small hospitals be appointed to formulate such a practical training school program were both strongly urged by Dr. Ford.

To secure adequate graduate nurse supervision, he told the conferees, is one of the most important steps in efficient hospital management and forms the necessary connecting link between the instruction received in the classroom and its application at the bedside of the patient.

### Permissive Legislation for Public Health Units Sought

The need for obtaining permissive legislation authorizing cities to combine with their own and adjacent counties for the creation of local public health units was brought to the attention of the county officers by Dr. Haven Emerson, Acting Director of the School of Public Health, University of Minnesota. Dr. Emerson is also serving as chairman of the Committee of the American

Public Health Association which is working out plans for adequate nationwide distribution of public health services.

According to Dr. Emerson, the present per capita expenditure of 42 cents for local health services in Minnesota will have to be raised to 81 cents from local or state funds, with or without federal grant-in-aids, if the benefits of modern preventive medicine, such as have been provided for our men and women in the military services, are to be available for all the people of Minnesota in peacetime.

### Too Much Overlapping

Minnesota, Dr. Emerson believes, will need a complete revamping of its public health jurisdictions. Neither the federal nor state government can provide for local health services of an efficient character and economically to the taxpayer, while there remain in Minnesota 2714 separate jurisdictions of local government, each one authorized to set up its own local health organization, was his candid appraisal of the current situation. Of the 1881 townships in the state, only 821 have a health officer, he said, and in a number of the townships and villages with part-time or full-time health officers, public funds are not spent economically because of duplicating and conflicting authority.

There is a passive resistance to change by large numbers of part-time and lay medical health officers of villages and towns, Dr. Emerson stated. To replace such officers by those of trained public health personnel is one of the major objects of the proposed units.

### Medical Health Officer Is a Specialist

Only at real sacrifice of time and money can a busy medical practitioner in his spare time serve the indispensable purposes of a health officer, according to Dr. Emerson. A medical officer of health is today as much a specialist in the application of the medical sciences for public protection against disease as any of the clinical specialists in medicine and surgery are specialists in their respective fields. Professional graduate education and practical experience training for the administrative and leadership responsibilities of a medical officer of health are in the main as exacting, time-consuming and expensive as is similar preparation for a career in most of the clinical specialties.

### Ten Local Health Jurisdictions Proposed

An ideal setup for Minnesota, Dr. Emerson asserted, would be to chart the state into ten units of local health jurisdictions, varying from 71,000 to 500,000 in population. The least population unit that could afford a full-time public health center is 50,000, he said. Such a center, to be completely staffed, should have a minimum personnel of sixteen; a full-time physician, ten public health nurses, or one for each 5,000 persons, a sanitation engineer and three clerical assistants.

While it is not possible to get the trained personnel to do the job now, he told the delegates, they will be coming back after the war. Permissive legislation should be set up now so when that time comes, Minnesota will be ready to institute the program without delay.

### Budgeting for Medical Care on the Way

Dr. A. W. Adson, of Rochester, Chairman of the Sickness Insurance Committee, appeared before the county officers to discuss the route that the Minnesota State Medical Association has traveled to complete the first step in providing "installment buying of medical care" by the introduction of enabling legislation. He said there was a general acceptance of two important basic points: (1) that arrangements must be made whereby the people can budget for medical care, because installment buying enters every phase of economic life today; and (2) that the best method of budgeting is through the establishment of some prepayment plan such as that provided for in the enabling legislation now under consideration by the State Legislature.

### Two-thirds of Hospitals in Four Counties

The over-all picture of hospital distribution in Minnesota was presented to the delegates by Dr. Lowry Nelson, professor of Rural Sociology at the School of Agriculture of the University of Minnesota.

Minnesota in 1944 ranked nineteenth among the states of the union in the number of hospital beds per thousand of population, according to statistics cited by Dr. Nelson. With 11.5 beds per thousand people (in the civilian population) the state was slightly above the national average of 10.5 beds per thousand.

It is the "general hospitals" which are of particular interest in considering the facilities avail-

able to the general public, Dr. Nelson said. Of these, Minnesota in 1944 had 4.8 beds per thousand, which approximates the frequently used standard of adequacy of 5 beds per thousand.

However, he pointed out, the hospitals are concentrated in urban centers, nearly half of all hospital beds in the state being located in Hennepin and Ramsey Counties. If to these were added St. Louis and Olmsted counties involving the cities of Duluth and Rochester, there would be included two-thirds of all general hospital beds in the State. Surveying the situation as to individual counties would reveal that fourteen counties in 1944 had no hospitals, the western half of the state showing the greatest lack of facilities.

### Greater Hospital Utilization Trend Among Farm Families

To make the situation even less feasible, Dr. Nelson said, there is a growing utilization of hospital facilities among the rural people as evidenced by the fact that in 1930, 65.7 per cent of hospital beds were in use in rural counties, compared to 78 per cent in 1944. This may be partially accounted for, he pointed out, by the activity of the Minnesota Farm Bureau in promoting the Blue Cross Hospital Plan among 35,000 farm families.

These figures are based upon our war-depleted population, and if considerable numbers of those who are away in the army and in industrial employment should return to the state, there would appear to be need for considerable expansion of hospital and clinical facilities in rural areas, he concluded.

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### HILL-BURTON HOSPITAL CONSTRUCTION BILL

Merits of palliative national legislation, patterned on a local level, such as the Hill-Burton Bill (S. 191), were cited by Mr. Ray Amberg, Superintendent of the University Hospitals, as being able to do much to develop programs for needful hospital construction in the states.

This bill is considered to be a practical step toward the enactment of the legislative program suggested for several years by the American Hospital Association as an alternative to any

such proposals as those embodied in the Wagner-Murray-Dingell Bills.

Under the provisions of this bill, a system of federal aid and grants to states for hospital planning and construction is authorized.

### **Local Appraisal Surveys Proposed**

Five million dollars have been earmarked for locally conducted state surveys to appraise all types of hospital service within the several states. The Bill proposes that \$100,000,000 be allocated among states for a hospital construction program, payment from the Federal appropriation ranging from 25 per cent to 75 per cent on the basis of the populations, financial needs and such other factors of individual states as the Surgeon General aided by a Federal Advisory Council may find relevant.

The principal clause as to general aim is that a state plan, in order to secure approval and Federal funds, shall "set forth a hospital construction program which the Surgeon General, upon recommendation of the Federal Advisory Council, finds to be in accord with standards prescribed by him with the approval of such council, and to be sufficient, in conjunction with existing facilities, to provide the necessary physical facilities for furnishing adequate hospital, clinic and similar services to all of the people of the State."

The *Hospital Management Journal* stated recently that legislative sponsorship of the bill in the two Houses of Congress is such that little or no opposition is anticipated, and before very long it is likely that it will become law.

### **AMA Approves Principles of Measure**

An editorial in a recent issue of the *Journal of the American Medical Association* warns that accomplishments sought by the measure can come only when construction of facilities depends on evidence of ability to maintain the proposed institution and to provide competent personnel.

The Board of Trustees of the AMA, at a recent meeting, indicated that the general policies of this measure are within the platform of the Association and expressed the opinion that the bill should receive the support of the medical profession.

### **Public Hearings Begun**

Hearings on the Bill began the latter part of February before a Committee under the Chair-

manship of Senator James E. Murray of Montana, chairman of the Committee on Education and Labor.

The AMA was scheduled for early appearance before the Committee. Dr. Victor Johnson, Secretary of the Council on Medical Education and Hospitals, of the Association emphasized, in his testimony before the Committee, the desirability of having the Federal Advisory Council, dealing with the construction of hospitals and health centers, include men of experience in the fields concerned; because of such experience they could command the full support of hospital administrators, physicians and the public. Stressing the importance of legislation which would guarantee for the postwar period adequate numbers of premedical and medical students, he told the Committee members, that a medical service is no better than the quality of the physicians who render the service. The mere construction of facilities is not in itself any guarantee to an area that it will have sufficient medical care of high quality. Complete effectiveness in achieving the objective that the proponents of the Hill-Burton measure desire to achieve can come only when sufficient, competent personnel is also provided.

Opinion seems to be, generally, that this is the first real scientific approach by means of national legislation toward the problem of the distribution of medical care, where the need is shown. A significant point is that control is left in the hands of local committees.

### **State Hospital Planning Committee Set Up**

Last month the Minnesota State Medical Association and the Minnesota Hospital Association took the lead in seeking establishment of a Hospital Planning Committee to formulate plans for initiating a hospital planning survey here in the state. Following action already undertaken in thirty other states, a committee of fourteen members was selected, representatives of hospital, medical, nursing and public health groups. It is hoped that this committee may ultimately be chosen as the official agency in the State to develop the hospital construction program here.

## MEDICAL ECONOMICS

### MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

**Julian F. Dubois, M.D., Secretary**

#### Minneapolis Man Sentenced to Seven-Year Prison Term for Narcotic Theft

*Re. State of Minnesota vs. Lloyd E. Gallagher*

On February 23, 1945, Lloyd E. Gallagher, forty-nine years of age, 1220 La Salle Avenue, Minneapolis, was sentenced by the Hon. Paul W. Guilford, Judge of the District Court of Hennepin County, to serve not to exceed seven years at hard labor in the State Prison at Stillwater. Gallagher was convicted by a jury following a trial for grand larceny in the second degree arising out of the theft by Gallagher on January 30, 1945, of 787 grains of Morphine Sulphate from the Danielson Medical Arts Pharmacy, Inc., Minneapolis. The theft occurred while employees of the Pharmacy were busy, but Gallagher was noticed leaving the Medical Arts Building with a box in his possession and was immediately apprehended by police.

Gallagher has a long record of narcotic law violations having been sentenced on April 22, 1944, by the Hon. Gunnar H. Nordbye, Judge of the United States District Court at Minneapolis, to a term of five years in a Federal Prison for having an opium layout in his possession. Gallagher was placed on probation for three years and fined \$300. On April 9, 1940, Gallagher received ninety days in the Minneapolis Workhouse for violating the City Drug Ordinance. On September 20, 1940, Gallagher was convicted of burglary in the third degree in the District Court of Freeborn County at Albert Lea, Minnesota. At that time Gallagher was given an indeterminate sentence at the Stillwater Prison. On November 23, 1936, Gallagher was sentenced to two years in Leavenworth Prison by the Hon. Matthew M. Joyce, Judge of the United States District Court at Minneapolis, for violation of the Harrison Narcotic Act. On July 24, 1935, Gallagher was sentenced to one year in the Minneapolis Workhouse by the Hon. Gunnar H. Nordbye, Judge of the United States District Court at Minneapolis, for a violation of the Harrison Narcotic Act and the Narcotic Drug Import and Export Act.

#### Physicians Licensed February 16, 1945

*By Examination January 16, 17, 19, 1945*

- BAYRD, EDWIN DORRANCE, Harvard U., M.D. 1942, Mayo Clinic, Rochester, Minn.
- BRYAN, ALLAN LINDLEY, Temple U., M.D. 1943, Mayo Clinic, Rochester, Minn.
- CHESLEY, GEORGE L., Northwestern, M.B. 1943; M.D. 1943, Mayo Clinic, Rochester, Minn.
- DEAN, ROSCOE ELMER, Jr., Temple Univ., M.D. 1943, Ancker Hospital, St. Paul, Minn.
- DRUMHELLER, JOHN FRANKLIN, Temple Univ., M.D. 1943, Mayo Clinic, Rochester, Minn.
- ESTES, JOHN EARLE, Jr., U. of Ill., M.D. 1943, Mayo Clinic, Rochester, Minn.
- GASTINEAU, CLIFFORD FELIX, Oklahoma U., M.D. 1943, Mayo Clinic, Rochester, Minn.
- GUTHRIE, ROBERT, U. of Minn., M.B. 1944, 924 S. E. Essex, Mpls. 14, Minn.
- HOLYOKE, JOHN BARTLETT, U. of Neb., M.D. 1940, Mayo Clinic, Rochester, Minn.
- HOSFELD, SARA MARJORIE, Johns Hopkins, M.D. 1943, Mayo Clinic, Rochester, Minn.
- JOHNSON, CHARLES CLIFFORD, St. Louis U., M.D. 1943, Mayo Clinic, Rochester, Minn.
- KNISELEY, RALPH MARION, U. of Pittsburgh, M.D. 1943, Mayo Clinic, Rochester, Minn.
- LIGHTFOOT, GRACE KATHRYN, U. of Wis., M.D. 1942, Mayo Clinic, Rochester, Minn.

- McVICKER, JOHN HUGH, U. of Colo., M.D. 1943, Mayo Clinic, Rochester, Minn.
- MASSON, JAMES KNOWLES, U. of Rochester, M.D. 1943, Mayo Clinic, Rochester, Minn.
- MORTON, ROBERT JAMES, U. of Kansas, M.D. 1943, Mayo Clinic, Rochester, Minn.
- NICKESON, ROBERT WARREN, U. of Pittsburgh, M.D. 1943, Mayo Clinic, Rochester, Minn.
- STOKES, GORDON DUDLEY, Northwestern, M.B. 1943; M.D. 1943, Mayo Clinic, Rochester, Minn.
- STRONG, GEORGE HENRY, Johns Hopkins, M.D. 1939, Ancker Hospital, St. Paul, Minn.
- WERNER, ROBERT FREDERIC, U. of Minn., M.D. 1927, 1370 Spruce Place, Minneapolis 4, Minn.
- WILLIAMS, BRUCE FOCH PERSHING, Columbia U. P&S, M.D. 1943, St. Mary's Hospital, Minneapolis 6, Minn.
- WILSON, BENJAMIN NORMAN, Baylor Univ., M.D. 1942, Mayo Clinic, Rochester, Minn.

#### *By Reciprocity*

- BOYLES, JOE MERRITT, Wash. Univ., M.D., 1930, 417 E. First St., Maryville, Mo.
- DAHLSTET, JOHN PAUL, U. of Neb., M.D. 1943, 123 Summit Ave., St. Paul 2, Minn.
- FISHER, RUSSELL LYNN, U. of So. Cal., M.D. 1944, Mayo Clinic, Rochester, Minn.
- MCQUARRIE, HARLOW BROOKS, Geo. Wash. U., M.D. 1941, Mayo Clinic, Rochester, Minn.
- WEBB, EDGAR AUGUST, U. of Mich., M.D. 1940, 1639 Med. Arts Bldg., Minneapolis 2, Minn.

#### *By National Board of Credentials*

- DICKSON, JAMES ALLEN, Jr., U. of Pa., M.D. 1941, Mayo Clinic, Rochester, Minn.
- HOPPES, EMERSON ELI, Geo. Wash., M.D. 1943, Mayo Clinic, Rochester, Minn.
- JOHNSTONE, WILLIAM WANDELL, Northwestern U., M.B. 1943; M.D. 1944, Oak Hills, Bemidji, Minn.
- OSBORN, JOHN ERNEST, U. of Buffalo, M.D. 1943, Mayo Clinic, Rochester, Minn.
- TUCKER, MARGARET EMMELINE, U. of Chicago and Rush Med. College, M.D. 1934, Dept. Radiology, U. of Minn., Minneapolis 14, Minn.
- WAGNER, NORMAN W., U. of Iowa, M.D. 1940, 207 E. 4th St., Morris, Minn.

#### COARCTATION OF THE AORTA

*(Continued from Page 303)*

ten years, there was an enormous enlargement of the heart. In the electrocardiogram there were signs of left bundle-branch block and myocardial damage; the inversion of the first T wave and diphasic second and third T waves were evidence of coronary sclerosis or myocardial damage. The coarctation had not interferred with the muscular activity of the heart for twenty-two years. There had been perfectly adequate compensation. Then, the blood vessels became inadequate to take care of the heart enlargement and signs of coronary failure developed and a breaking down of the vessels occurred.

DR. KANO IKEDA: The largest heart recorded in the Department of Pathology of the University, according to Dr. Clawson, weighed 1,200 grams. I have encountered one weighing 1,100 grams in this hospital and that was a case of aortic stenosis.

#### References

1. Brown, James W.: Congenital Heart Disease. London: John Bale Medical Publications, Ltd., 1939.
2. Friedberg, Charles: Coarctation of the aorta—a new theory as to its pathogenesis. *J. Mt. Sinai Hosp.*, 8:520, (Jan.-Feb.) 1942.
3. Golden, J. S., and Brams, Wm. A.: Extreme cardiac enlargement. *Am. Heart J.*, 13:207, 1937.

# Minnesota Academy of Medicine

Meeting of January 10, 1945

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, January 10, 1945. Dinner was served at 7 o'clock and the meeting was called to order at 8:15 by the President, Dr. A. G. Schulze.

There were forty-one members present.

Minutes of the December meeting were read and approved.

The president announced that the Academy had recently lost two members by death, Dr. Herbert Davis and Dr. L. E. Daugherty, and he appointed Necrology committees to draw up memorials.

Dr. L. Haynes Fowler, in charge of Base Hospital No. 26 in Italy, was home on leave and gave a short talk on his experiences and travels with that hospital.

The scientific program consisted of the Address of the Retiring President.

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## CLASSIFICATION AND PATHOLOGY OF TUMORS OF THE RETINA

WALTER E. CAMP, M.D.

Minneapolis, Minnesota

Before giving my paper on Tumors of the Retina, I want to thank the members of the Academy for the honor of serving as their President for the past year. I have had the help of a good secretary and a co-operative executive committee.

Intraocular tumor, as compared to tumor of the rest of the body, is a rare disease. The commonest intraocular tumor is malignant melanoma of the choroid. A large series of these tumors, with a complete follow-up study, was recently reported by Doctor Frank Burch before the Academy last year.

Tonight I want to report a number of cases of tumors of the retina which constitute a much smaller series.

An accurate classification of tumors of the retina is difficult due to conflicting nomenclature in the literature. All primary tumors arising in the retina must have origin either in the nervous elements, the glial tissue of supporting elements, or the tissues of the vascular system.

In the embryonic retina the primitive cell, or retinoblast, is biopotential in that it may develop into a neuron or a glial cell. The majority of tumors of the retina originate from this embryonic cell and are called retino-blastomata and correspond to the older term of glioma of the retina. It is in structure and behavior, however, quite different from a glioma of the brain.

Another type of tumor of the retina is one arising from the primitive spongioblasts. The cells are columnar, frequently ciliated, and arranged around a cen-

tral lumen in rosette formation; the "rosettes" of Wintersteiner or Flexner. These tumors arise from the external nuclear layer of the retina or the nuclei of the rods and cones. They may often have multiple foci of origin in the retina.

The next most common tumor of the retina is a so-called dyktyoma. This tumor has its origin in the epithelium of the ciliary body or pars ciliaris retinae. It is classified as a medullo-epithelioma and may be benign or malignant. It is extremely rare.

The next most common tumor of the retina is one that originates in the glial, or supporting tissue. This is a true glioma or astrocytoma. This tumor is probably the most common of all brain tumors. In the eye the tumor may be small, as reported by McLean, or be large and perforate the globe at the limbus. The tumor is usually benign, but may result in the loss of the eyeball.

Another group of retinal tumors, usually benign, have a common history of congenital origin and tend to effect either the vascular or nervous system. This group has been classified by Von der Hoeve as phakomatosis, and includes the congenital diseases of angiomatosis retinae, tuberous sclerosis, and neurofibromatosis. Tuberous sclerosis, or Bourneville's disease, is a rare congenital affliction, is usually fatal, and has large fibrous growths in the brain as well as the eye.

Angiomatosis retinae or Von Hippels-Lindau disease is a more common congenital disease affecting the retinal blood vessels. The published cases on record show a hereditary familial incident. About one third of the cases are bilateral. The symptoms may be very slight or may be pronounced, leading to retinal hemorrhage and detachment and loss of the eye. About 20 per cent of the cases of angiomatosis retinae show cerebral angiomatosis or similar tumors in other organs of the body as described by Lindau.

Neurofibromata are found in the retina and optic nerve and here have the same structure as in other parts of the body. These tumors have their origin from the cells of the sheath of Schwann. Histologically they are little different from the tumor mass of tuberous sclerosis. Neurofibromata are, however, found most often in the peripheral nerves while tuberous sclerosis most often affect the central nervous system or brain.

The purpose of this paper tonight is to discuss the pathology of the more common or malignant tumors of the retina, namely, retinoblastoma and neuroepithelioma. Tumors arising from the anterior extension of the retina on to the ciliary body and iris are usually benign and exceedingly rare. They are always of epithelial origin, as there is no glial or supporting tissue in the pars ciliaris or pars iridica retinae. In the retina proper, aside from the vascular system, tumors may arise from the nervous elements or from the supporting glial tissue. One true form of glial tissue tumor is glioma,

or astrocytoma of which we have one example. Retinoblastoma, I believe, and neuroepithelioma, I am sure, originate in the nervous elements of the retina. These tumors originate in the inner half of the retinal layers, namely, the ganglion cell layer, and the layer of bipolar cells, or inner nuclear layer.

Probably the best pathological study of a series of cases reported recently is that by Benedict and Parkhill in the *American Journal of Ophthalmology* in 1941. They recognize, aside from true glioma of the retina of which they have no cases, two distinct classes of tumors arising from the retina—the more malignant retinoblastoma, and the less malignant neuroepithelioma. Their series of thirty-five cases was about equally divided, seventeen neuroepithelioma and eighteen retinoblastoma. Their conclusions were that these tumors arose chiefly from the inner layers of the retina, namely, the inner nuclear layer and the ganglion cell layer, practically never from the outer nuclear layer and the layer of rods and cones. They believe the tumors may have multiple foci of origin in the retina. They believe, also, that the tumors originate most frequently—if not always—from the glial cells and do not develop from embryonic rests of the primitive retinal epithelium.

From a follow-up study, they found only 12.5 per cent of the malignant type survived, while 62.5 per cent of the less malignant type survived; a total survival of all cases of all types followed of 37.5 per cent which is an exceedingly good report.

From the ophthalmological laboratory at the University, I want to report on a series of fifteen cases, many of which I regret we do not have follow-up records. Six are retinoblastoma; seven are neuroepithelioma; one dyktyoma and one glioma, or astrocytoma. The follow-up in the case of glioma has not been made. The patient having dyktyoma of the ciliary body died of chronic glomerulo nephritis. Five of the other thirteen patients followed are dead—four of retinoblastoma and one of neuroepithelioma, who died following a temporal decompression operation and enucleation by this route.

Grossly the tumors of the retina are white or grayish-white in color, rarely circumscribed, except in their very earliest stages. Most often at the time of enucleation and examination of the eye, the tumor is diffuse, involving the greater part, if not all, of the retina, extending to the choroid, ciliary body, iris, anterior chamber, and frequently the optic nerve and the perforating vessels and nerves of the sclera. Secondary glaucoma is usually present if the tumor has invaded the filtration angle, or obstructed the vortex veins at the equator of the globe. Areas of necrosis and deposits of calcium are usually present in the majority of tumors. X-ray of the orbit for the presence of calcium in the globe is a valuable aid in the differential diagnosis of so-called "glioma" and "pseudo-glioma" or metastatic ophthalmia from trauma or hematogenous panophthalmitis.

Clinically some cases of tumors of the retina are not seen by the physician or oculist until invasion of the optic nerve or perforation of the globe has occurred. In the literature about 25 per cent of these tumors are bilateral. In Benedict and Parkhill's series 11.4 per

cent were bilateral. In our series 13.3 per cent were bilateral.

Tumors of the retina of the retinoblastoma, or more malignant type, microscopically, are composed of small round or densely packed wedge-shaped cells with very little cytoplasm and large hyperchromatic nuclei. The cells usually are densely packed and have no definite arrangement except a tendency to perivascular formation, especially when necrosis of the tumor is marked. Calcium deposits also are common in necrotic tumors. Extension of the tumor into the choroid, optic nerve, and orbital tissue is common and in these locations necrosis and calcium formation seldom occur.

From a pathological standpoint, tumors of this class are made up of highly undifferentiated cells with a tendency to extensive intraocular and extraocular extension, frequent local recurrences, and local metastases to the brain and bones of the skull and face. The mortality of tumors of this group reported by Benedict and Parkhill is 87.5 per cent. Our series, although incompletely followed, show a high mortality. Following Broder's classification of malignant tumors, Benedict and Parkhill would classify this group as glioma of the retina, Grade IV. These tumors, in other words, show the least differentiation from the primitive ectoderm of the retina or the greatest dedifferentiation from these primitive cells. Which of these two theories is correct will be discussed later.

Tumors of the retina showing the next degree of malignancy are the so-called neuroepitheliomata. In Benedict and Parkhill's series and in our series these tumors form about half of the total number of retinal cancers. Grossly they show a much more organized tumor, are not nearly so friable, and show less necrosis and calcium formation than that found in retinoblastoma. The individual cells show more differentiation and more of an epithelial structure. The nuclei are less chromatic, the cytoplasm is more abundant, and the cells are commonly arranged in rosette formation around a central lumen or clear space. Cells surrounding this lumen have cilia or ciliary processes extending into the lumen resembling the ependymal epithelium of the neural canal of the central nervous system. These cells of the rosettes do not resemble and should not be compared with primitive rods and cones. In addition to the rosettes, smaller or larger collections of cells are occasionally grouped in circles or incomplete circles around fibrillary or necrotic material forming pseudorosettes. In one of our cases of this type of tumor, i.e., neurofibroma, in addition to rosette and pseudorosette formation, the tumor cells are arranged in convoluted tubules similar to the two layers of the primitive optic cup (Case 4). Obviously this tumor is highly differentiated and would fall into Benedict and Parkhill's classification of glioma—neuroepithelioma type Grade II. This tumor approaches in microscopic pathology that of adenoma of the ciliary epithelium or dyktyoma, but of course is more malignant.

The pathogenesis of retinal cancer is still not clearly understood. Virchow in 1864 originated the term glioma of the retina and believed they arose from the glial or supporting tissues. Flexner (1891) described the tu-

(Continued on Page 320)

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# SEARLE

RESEARCH IN THE SERVICE OF MEDICINE

## MINNESOTA ACADEMY OF MEDICINE

(Continued from Page 318)

mors with rosette formation and likened them to the rods and cones of the retina and thought they originated from the external layers of the retina and for this reason introduced the term neuroepithelioma. Grinker (1931) recognized that quite a large number of these tumors were composed of highly undifferentiated cells of a type called "retinoblast," a biopotential cell capable of developing into glia or nerve cells. This class of tumors he designated as retinoblastoma.

The site of origin of retinal cancer is exceedingly difficult. It is almost impossible to determine whether the tumor as shown in the microscopic section has arisen *in situ* as found, or has extended from other layers of the retina. There is no doubt that from a study of the literature and from our own cases, many of these tumors have multiple foci of origin. Benedict and Parkhill believe that practically all, if not all, of these tumors have their origin in the inner half of the retina, i.e., the nerve fiber layer, ganglion cell layer, and layer of bipolar cells, or inner nuclear layer. They also believe tumors seldom, if ever, arise from the outer nuclear layer or the layer of rods and cones.

Observation of our cases show also that practically all originate, or apparently originate, from the inner half of the retina—chiefly the inner nuclear layer or layer of bipolar cells. In one case (No. 4) the tumor apparently represented the entire inner layer of the optic vesicle and in that case would include all layers which, if differentiated, would form the mature retina. Probably the earliest described neuroepithelioma is that reported by Ch'n (1941). His case is that of a female Chinese infant twenty-one months of age, who died of a large perforating tumor of the right eye. Examination of the retina of the left eye at autopsy showed three small distinct tumors in the retina, measuring 4, 5, and 6 mm. in diameter and raised about 1 to 2 mm. on the surface of the retina.

From the microscopic study, he found they had pseudorosettes and all originated from the inner nuclear layer or layer of bipolar cells.

Benedict and Parkhill believe that probably all, if not all, of these retinal tumors originate from glial cells and prefer to retain the original term glioma retinae designated by Virchow. They believe these tumors arise by a dedifferentiation of the mature cells to form tumor cells. They do not believe the tumors are congenital or develop from embryonic rests as is thought by some pathologists.

One argument in favor of a congenital origin or origin from immature cell nests is that these tumors always develop in infancy and early childhood, practically always in the first decade. Benedict and Parkhill have one case, six years and four months of age, and our oldest case was fourteen years of age, which is the oldest case recorded in the Registry of the Army Medical Museum.

We do know that these tumors arise from the retina and I believe that, until it can be clearly demonstrated

which definite cell component or components give origin to the growths, a general term of retinoblastoma is desirable. The degree of malignancy can be designated as Grades 1, 2, 3, 4, following Broders' classification.

Retinoblastoma Grade 4 would correspond to tumors now classified under that name.

Retinoblastoma Grades 3 and 2 would be less malignant, showing more differentiation of cells as manifested by rosette and pseudorosette formation and even tubule formation as seen in one of our specimens. This group would include what are now designated neuroepithelioma of the retina and possibly malignant epithelioma of the ciliary epithelium.

Retinoblastoma Grade 1 would include the least malignant or possibly benign growths now called glioma and which are known to arise from glial tissue and show fibrillar structure by special stains.

### Discussion

DR. H. W. GRANT, Saint Paul: I am very much interested in the subject of tumors of the retina, but have had very little experience. The oldest patient, now seventeen years of age, had an enucleation of the left eye at about one year with a resulting deformity of the left orbit. She is now quite well, however. Three other patients, all with bilateral retinal tumors, are not living. One boy, the son of a physician, had a diagnosis of glioma which was treated by radium implant with excellent results but very poor vision. The boy is still well and healthy. The last patient seen had one eye enucleated about a year ago and now has a tumor in the other eye involving most of the retinal tissue.

DR. ERLING W. HANSEN, Minneapolis: I think the subject has been covered very nicely. I don't think any of us could do quite the job our pathologist does. The question Dr. Camp raised in regard to the origin of these tumors is a very great question. Going back to the histological picture in regard to the point of origin, as well as the ages of these patients, mostly in infants and children, it would seem logical to suppose that they are a developmental thing and that they are of families who have repeaters. This would indicate to me that there is something in the genes of the tissues that would tend to bring this about. Seldom do we get these after four or five years of age. Some of the cases in this series I have been familiar with. I wonder if one of them is not put in as one of the "unknowns" in Dr. Camp's list. The child is now about four and one-half years old. The first eye was enucleated when he was two and a half. He had a small tumor in the second eye, had irradiation, and it now seems to have been arrested. I wish Dr. Camp would say something about what we can expect from irradiation and whether there is any difference in the effects of irradiation on the different types of tumors.

DR. CAMP, in closing: The point which Dr. Hansen brought up about irradiation is important. Verhoff, I believe, was the first to point out that these tumors are radio sensitive. I believe the retinoblastoma type is more radio sensitive than the neuroepithelioma type. I am glad Dr. Hansen gave us the "follow-up" on his case and that he has been so successful. I hope to have a good "follow-up" on all of these cases at a later date.

The meeting adjourned.

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## REPORTS and ANNOUNCEMENTS

### MEDICAL BROADCAST FOR APRIL

The following radio schedule of talks on medical and dental subjects by William O'Brien, M.D., Director of Postgraduate Medical Education, University of Minnesota, is sponsored by the Minnesota State Medical Association, the Minnesota State Dental Association, the Minnesota Hospital Association and the University of Minnesota School of the Air.

April 4—11:00 A.M.—WLB	Advertising and Health
April 7—9:15 A.M.—WCCO	*Cancer Problem
April 7—11:30 A.M.—WLB-KROC	Medicine in the News
April 11—11:00 A.M.—WLB	Alcohol
April 14—9:15 A.M.—WCCO	*Cancer Diagnosis
April 14—11:30 A.M.—WLB-KROC	Medicine in the News
April 18—11:00 A.M.—WLB	Tobacco
April 21—9:15 A.M.—WCCO	*Cancer Treatment
April 21—11:30 A.M.—WLB-KROC	Medicine in the News
April 23—4:45 P.M.—WCCO	Your Hospital in War-time
April 25—11:00 A.M.—WLB	Contagious Disease
April 28—9:15 A.M.—WCCO	*Cancer of Mouth
April 28—11:30 A.M.—WLB-KROC	Medicine in the News

\*Keyed with subject of the month—Minnesota State Medical Association Packet of Information for Members.

### AMERICAN COLLEGE OF CHEST PHYSICIANS CANCELS MEETING

The American College of Chest Physicians, with a membership in twenty-three countries, has cancelled its annual meeting scheduled to be held at Philadelphia in June, 1945.

The Executive Council of the College voted to hold a business meeting of the board of Regents at Chicago, June 17.

## WOMAN'S AUXILIARY

MRS. ANTHONY J. BIANCO, *President*  
Duluth, Minnesota

MRS. ROYAL V. SHERMAN, *Editor*  
Red Wing, Minnesota

### STATE BOARD MEETING

The Mid-Winter Board Meeting of the Woman's Auxiliary to the Minnesota State Medical Association was held February 23, in Minneapolis, at the Hotel Radisson. Approximately thirty members were in attendance.

Mrs. Anthony J. Bianco of Duluth, State President, gave a very comprehensive report of the national convention held in Chicago. We were proud to learn of the appointment of Mrs. Bianco to the National Board.

Interesting reports were presented by the officers, chairmen of the standing committees, and county presidents. It is apparent that Auxiliary members are extremely active and valuable contributors to war projects.

The Nurses Draft Bill came in for a share of the discussion as did a bill before the Minnesota State Legislature which would provide for aid to counties for supporting Public Health Nurses.

Dr. Myron Weaver, Assistant Dean of the Medical School at the University of Minnesota, spoke on "Rehabilitation of Doctors After the War," at the noon luncheon. Mrs. W. H. Rucker and Mrs. Thomas Kinsella were in charge of arrangements.

#### RENVILLE COUNTY

Mrs. John Dordal of Sacred Heart, State War Service Chairman, served as chairman of the annual War Fund drive of the American Red Cross which was held March 1.

The meetings of the Renville County Medical Auxiliary are held in conjunction with the Renville County Medical Society. These meetings are dinner meetings held the second Tuesday of each month. The members are active in Red Cross and other types of War Service.

#### HENNEPIN COUNTY

Mrs. Walter K. Haven, Minneapolis, chairman of the Hennepin County Medical Auxiliary bond booth in the Medical Arts Building lobby, attended the luncheon given by the Hennepin County War Finance Committee, at which time they honored the Hennepin County women who have given their time selling war bonds.

Service stripes for more than two hundred hours' work since the Auxiliary Bond booth opened in September, 1942, were given to the following Hennepin County Medical Auxiliary women: Mmes. H. O. Altnow, S. G. Balkin, M. L. Cable, F. E. Harrington, A. P. Lapierre and C. O. Maland.

A citation from the Treasury Department in Washington was awarded to the Hennepin County Medical Auxiliary for outstanding work in the Sixth War Loan.

March 2 marked one of the most important meetings of the year—Public Relations. Mrs. Harlan J. Hanson, chairman, arranged an outstanding program. The guest speaker was Dr. Edward L. Tuohy of Duluth, President of the State Medical Society, who presented "The Technique of Growing Old Gracefully." Dr. Frank J. Hill, new Minneapolis Health Commissioner, spoke on "Health Needs of Minneapolis," and showed a short film in connection with his talk. A tea in the Medical Arts lounge followed the program with Mrs. Richard H. Lindquist in charge. Music was presented by Ethelyn Kingsbury, vocalist, accompanied by Mrs. R. W. Giere.

Hennepin County reports twelve new members this year.

An interesting news letter is published each month, which is sent to members and their husbands who are in the service of their country. The letter contains local and service news and is ably written by Mrs. L. J. Leonard and committee.

Poverty or the fear of poverty, more than any other single factor, changes the tides of battle in favor of the tubercle bacillus in the individual or in the family. Poverty engenders crowding, ignorance, nutritional deficiencies, and medical neglect; all of which create a favorable soil for the tubercle bacillus. The result is that benign infections become malignant, closed or sputum negative cases become open or sputum positive cases, the spread of germs becomes constant and massive, and cases multiply.—ROBERT E. PLUNKETT, M.D., Connecticut State M. J., January, 1944.



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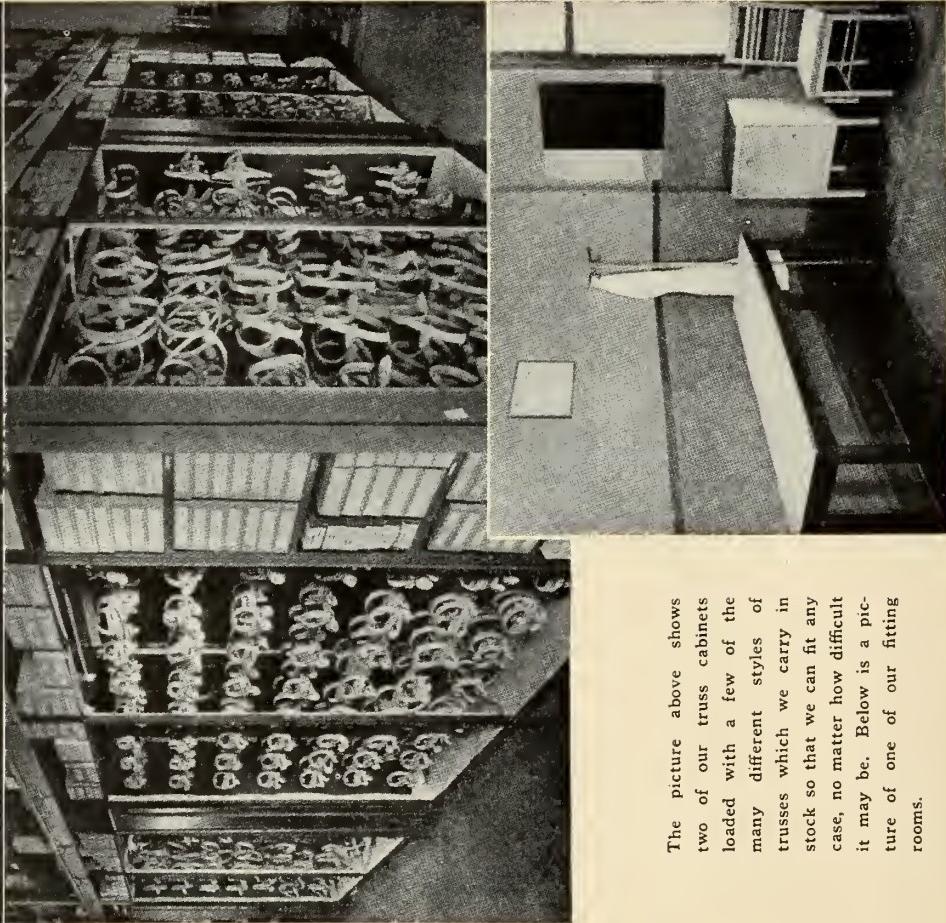
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# ♦ Of General Interest ♦

Dr. J. C. Poore has closed his offices in Isle, consequent to his induction into the U. S. Navy.

\* \* \*

Dr. J. L. Delmore, of Roseau, has been elected chairman of the Roseau County Nursing Advisory Board for 1945.

\* \* \*

Dr. E. E. Zemke will re-open his offices in Fairmont shortly after his completion of postgraduate work at the University of Minnesota on April 1.

\* \* \*

"Traumatic Injuries of the Face" was the subject of a lecture given by Dr. J. B. Erich, of the Mayo Clinic, to medical officers at Fort Snelling on February 20.

\* \* \*

A paper entitled, "Chemotherapy in Experimental Tuberculosis, Including a Review of Newer Evidence," was presented by Dr. F. M. Feldman, Mayo Clinic, at the symposium on chemotherapy conducted at Wayne University in Detroit the latter part of February.

\* \* \*

Dr. B. J. Clawson and Dr. Arthur Kirschbaum were the speakers at the March 20 meeting of the Minnesota Pathological Society, University of Minnesota Medical School. "Experimental Endocarditis" was Dr. Claw-

son's subject. Dr. Kirschbaum discussed "The Islets of Langerhans in Alloxan Diabetes."

\* \* \*

Dr. P. H. Heersema, Mayo Clinic, who is a member of the Committee on Nervous and Mental Diseases of the Minnesota State Medical Association, attended the recent meeting in Saint Paul of the committee for discussion of pending legislation for the commitment and care of senile patients.

\* \* \*

Dr. Walter C. Alvarez, Mayo Clinic, gave the Phi Beta Pi lecture at the University of Texas, Galveston, on March 2. His subject was "Psychosomatic Medicine, or Mind over Matter." Dr. Alvarez also spoke on the same topic at the February meeting of the Ramsey County Medical Association.

\* \* \*

Announcement has been made of the dissolution of the partnership of Drs. A. L. Perl and L. J. Holmberg of Canby on March 1. Dr. Perl, who has been associated with Dr. Holmberg since September, 1936, when he came to Canby from Windom, has purchased the practice of Dr. J. H. Raymond in Canby. Dr. Raymond is studying x-ray specialization in Chicago.

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## OF GENERAL INTEREST

Dr. Gilbert J. Thomas and Dr. F. C. Schlumberger, formerly with the Moore-White Clinic of Los Angeles, announce the opening of offices at 9622 Brighton Way, Beverly Hills, California, with practices limited to Urology, Diagnosis, Surgery and Consultations. Dr. Schlumberger is in active duty in the U. S. Navy.

\* \* \*

Dr. Herman Koop, of Cold Spring, has resigned from the office of coroner of Stearns County because of the excessive demands of his private practice. Dr. John E. Libert, of St. Cloud, who has been county physician, has resigned that office to become coroner. Dr. Harry B. Clark, also of St. Cloud, is Dr. Libert's successor.

\* \* \*

Retired to the inactive list after two and one-half years in the Army Medical Corps, Dr. Bernard Nauth has rejoined the staff of the Winona Clinic. Dr. Nauth, whose service included six months in New Guinea, was returned to this country on July 1, 1944, and stationed at Selfridge Field, Michigan, until January 30, 1945, the date of his retirement.

\* \* \*

Dr. Sumner L. Koch, Professor of Surgery at Northwestern University Medical School, addressed the Saint Paul Surgical Society at a dinner meeting held at the University Club, Saint Paul, March 21, 1945, on "Nerve and Tendon Injuries." He stressed the importance of immediate repair in the absence of infection and deferred operation where inflammatory reaction or infec-

tion had supervened, laying emphasis on delicate technique to assure return of function.

\* \* \*

Dr. Frank O. Robertson, who, before his induction into military service in April, 1941, was in private practice in East Grand Forks, Minnesota, joined the staff of the Campbell-Williamson Clinic in Grand Forks, N. D., on February 26. For the past three years Dr. Robertson has been stationed at Fitzsimmons General Hospital in Denver. During his final year there, he served as chief of the medical section.

\* \* \*

Mrs. Florence B. Fitzgerald, for fifteen years employed in educational and publicity work in the office of the Minnesota State Medical Association, has resigned to devote her attention to her home, although her twin daughters are both with the Marines. Members of the Association who came into contact with Mrs. Fitzgerald appreciated her real ability and cooperative spirit. She will be greatly missed.

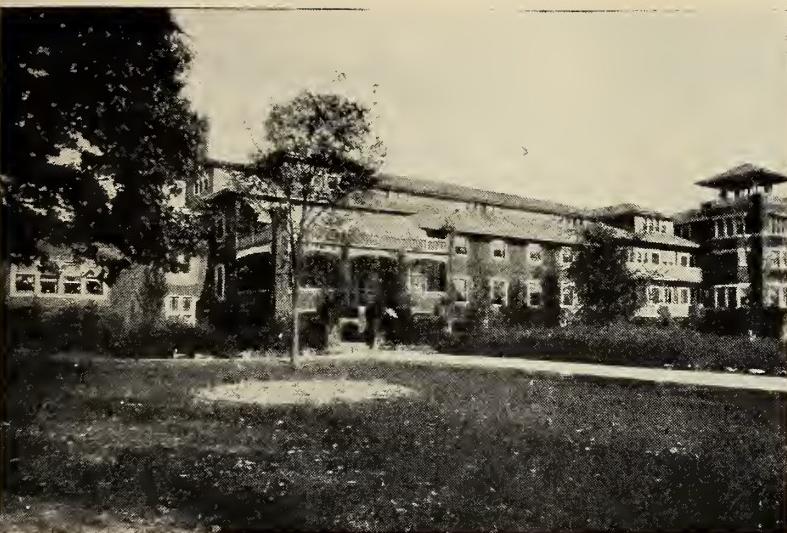
\* \* \*

Dr. F. H. Krusen, Mayo Clinic, while in the East to attend a number of important conferences, was guest speaker of the Smith-Reed Russell Society of George Washington University School of Medicine, where he spoke on the "Future of Physical Medicine." Among the meetings attended by Dr. Krusen was a conference of the committee on war and postwar rehabilitation and reconditioning of the Baruch Committee on Physical

(Continued on Page 328)

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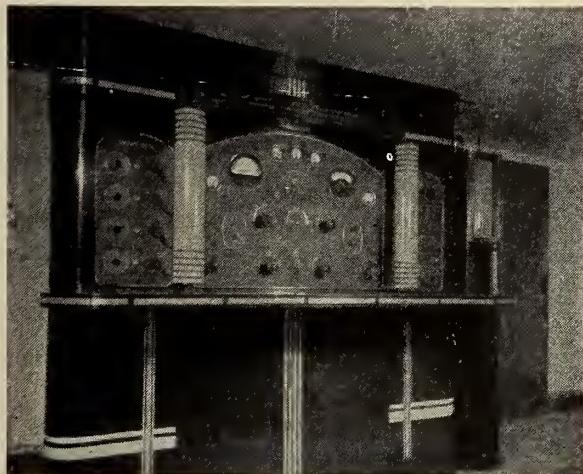
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(Continued from Page 326)

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Medicine in Washington, the meeting of the scientific advisory committee of the Baruch Committee on Physical Medicine in New York, and the joint meeting of the committee of the Council on Physical Education of the American Medical Association and the Council on Industrial Health held in Chicago.

\* \* \*

The honorary degree of Doctor of Science was conferred on Dr. S. L. Slater, of Worthington, by his alma mater, the University of Richmond, Virginia, at a special convocation held at the university on April 27. A Phi Beta Kappa key, which had been awarded to Dr. Slater previously, was presented to him at the same ceremony. Dr. Slater, who is a nationally-recognized authority on tuberculosis and public health, has been superintendent of the Southwestern Minnesota Sanitarium since 1919.

\* \* \*

The National Foundation for Infantile Paralysis announces that scholarships are available for training in physical therapy with classes beginning in June and July. About half of the 2,500 qualified physical therapists in the United States are in the armed services, and there is need at present for some 5,000 additional physiotherapists not only in the treatment of poliomyelitis, but of other diseases. Candidates must have two years of college including biology and other basic sciences, or be graduates of accredited schools of nursing or physical education. Applications should be made to the National Foundation for Infantile Paralysis, 120 Broadway, New York 5, N. Y., or to the American Physiotherapy Association, 1790 Broadway, New York 19, N. Y.

\* \* \*

The following warning has been issued by the Division of Preventable Disease of the Minnesota Department of Health:

Infection with both gonorrhea and syphilis may and sometimes does occur following identical exposure. Penicillin acts favorably on both diseases but the dosage used for gonorrhea will not be curative for syphilis. It will, however, undoubtedly retard the appearance of an initial lesion or otherwise change the course of syphilis. It is imperative therefore that in every case of gonorrhea treated with penicillin, blood tests for syphilis be made approximately two months later. If a patient does not return as directed for this test, either the State Department of Health or, if in Minneapolis, Saint Paul, or Duluth, the local department of health should be notified.

Since there has been a definite increase in the number of cases of gonorrhea, attention to this precaution is of greater importance.

\* \* \*

### Postwar Medicine

What returning medical officers want in the future and available training facilities were discussed by Lieutenant Colonel Harold C. Lueth, liaison officer in the Surgeon General's office, and Doctor Victor Johnson,

secretary of the council on education and hospitals of the American Medical Association, at a meeting held in Plummer's Hall in Rochester on February 20.

Quoting from the returns on questionnaires sent to 24,000 medical men in the services, Colonel Lueth stated that a majority of the more recent graduates were desirous of further training in courses ranging from six months to three years. Of the long courses, surgery was most favored, but others mentioned included internal medicine, obstetrics, gynecology, general review, psychiatry, neurology, pediatrics, orthopedics, ophthalmology, radiology, and otolaryngology. Only nineteen per cent of the officers said they wanted no training, and these were mainly older men. Approximately 92 per cent of the doctors are licensed; those who are not are the young men who entered service directly from internship.

Dr. Johnson, speaking on "Facilities for Training," pointed out that further training of these medical veterans was not only a matter of giving them what they wanted, but equally important, it was providing the training which would be most beneficial to the population at large. Approximately 15,000 of the returnees want hospital training, but present facilities could not accommodate more than 6,000 doctors with approved situations. However, a probable demobilization period of two years would double hospital opportunities, Dr. Johnson explained.

\* \* \*

#### Drive for Medical Books and Equipment

The Minnesota Chapter of the American Soviet Medical Society is initiating a campaign to collect medical

books and instruments to be sent to Russian medical libraries and hospitals through Russian War Relief. These books and instruments are desperately needed by the Russian medical men and scientists to help them restore the essential medical educational and research facilities in the regions liberated from the Nazis. Most of the scientific libraries and equipment of schools, research institutes, and hospitals were either destroyed by the Nazi invaders, or stolen and shipped to Germany.

Medical textbooks published subsequent to 1926 and written in English, French, German or Russian are most welcome. Textbooks published prior to 1926 are *not* desired. Classics of any date are urgently needed.

Contributions of books and instruments may be left at the Office of Pediatrics, University of Minnesota Hospital, or at the Office of the Minneapolis Committee, Russian War Relief, 813 Marquette Ave., Minneapolis, Minnesota.

Sending medical books to the U.S.S.R. is not entirely a one-way affair. Soviet publishers have been very generous with their own medical publications. The University of Minnesota library has received a number of Russian medical books and periodicals, and the Soviet publishers refused any financial remuneration. However, they will be grateful for similar gifts from us.

Dr. Irvine McQuarrie, Professor and Head of the Department of Pediatrics at the University of Minnesota Medical School, is President of the Minnesota Chapter of the American Soviet Medical Society. Other officers are: Dr. R. F. Hedin of Red Wing, Minnesota, Vice President; Dr. Leo Rigler, Professor and Head of the Department of Radiology at the University Hospital, Treasurer; Dr. Samuel Corson, instructor in Physiology at the University of Minnesota Medical School, Secretary. The following are members of the Executive Board: Dr. Moses Barron, Dr. E. T. Herrmann, Dr. J. A. Lepak, Dr. M. B. Visscher and Dr. O. H. Wangenstein.



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## BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

**MALARIA IN THE UPPER MISSISSIPPI VALLEY.** 1760-1900. Supplement to the Bulletin of the History of Medicine. Edwin H. Ackerknecht. 142 pages. Illus. Price 2.00, paper cover. Baltimore: Johns Hopkins Press, 1945.

**PROCEEDINGS OF THE RUDOLF VIRCHOW MEDICAL SOCIETY,** Volume III, 1944. 103 pages. Illus. Price \$2.00, paper cover. New York: Brooklyn Medical Press, Inc., 1944.

**MY SECOND LIFE.** An Autobiography. Thomas Hall Shastid, M.D., LL.B., Sc.D., F.A.C.S., F.A.C.P. 1174 pages. Illus. Price \$10.00, cloth. Ann Arbor: George Wahr, 1944.

**SURGERY OF THE HAND.** By Sterling Bunnelle, M.D. 734 Pp., 597 Illus., Price \$12.00. Philadelphia; J. B. Lippincott Co.

This well-written, profusely illustrated book on surgery of the hand, primarily written for the general surgeon and the general practitioner of medicine, contains a detailed discussion of all the problems that can arise, relating to the hand, and is very complete in this regard.

The forepart of the book is devoted to a chapter on comparative anatomy, and the evolution of the human hand. In the discussion of the normal hand, the author stresses the importance of the entire arm, as related to the hand, and devotes considerable space to the anatomy, the normal mechanics and normal functions of the hand.

The chapter devoted to the examination of the hand is very well written and stresses procedures of examination for determining disability of hands and the proper reporting of findings of compensation cases.

The remainder of the book is devoted to the reconstruction of the hand. This is prefaced by a chapter on the general principles involved in the operative technique. The subsequent chapters discuss in detail the treatment of the numerous conditions that can arise as the result of hand and arm injuries, infections and growths. A complete bibliography is provided at the end of each chapter for the reference of anyone wishing further details in operative technique not covered in the text.

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types of injury. Hand injuries are frequently a problem not only for the general practitioner, but also to the highly trained and most skillful men limiting their practices to this field. This book should be in the library of every practitioner of medicine, most particularly, in the hands of the general practitioner, the general surgeon and the industrial surgeon, for frequent reference and thorough study to aid him in the solving of the problems which arise in hand conditions.

E. W. MINTY, M.D.

**ANALYSIS AND INTERPRETATION OF SYMPTOMS.** Edited by Cyril M. MacBryde, M.D., Philadelphia: J. B. Lippincott Co., 1944.

This compilation, edited by Cyril M. MacBryde, consists of ten chapters besides his introduction, and covers a considerable review of striking symptoms, such as nervousness and fatigue, fever, headache, thoracic pain, cough and hemoptysis, abdominal pain, hematemesis, jaundice, joint pain and obesity. The book has one great advantage of simplicity of arrangement and abridgement of detail. Each author gives his material in monographic form, with an excellent set of references at the end of each chapter that does not presume to be a bibliography. For those who keep in close touch with the current literature on any special subject it is easily seen that the compilation stems not only from personal interest and observation but from the literature dealing with that field. By that token the men chosen to write the chapters have shown by their

writings that they are entitled to do so and to express their opinions.

Take, for example, the chapter by Portis on jaundice. A simple reading of the references indicates that the author has struggled with the techniques of differentiation popularized by Cecil Watson, A. R. Rich and the experimental work of Mann and Bollman.

Sarah Jordan's analysis of abdominal pain is a very worthy review, well written (as is her habit), and puts in relatively simple language the intricate details pertaining to the nerve pathways and their entangling alliances in terms of regional and somatic pain.

I recommend the book for the general reader; it is well worth while.

E. L. TUOHY, M.D.

**FUNDAMENTALS OF PSYCHIATRY.** By E. A. Strecker. 2nd ed. Philadelphia: J. B. Lippincott Co., 1944.

This is a book that every general surgeon and internist should read; and having read it, go back to it frequently for its general enlightenment and satisfaction. The author's writings have always been lucid, non-argumentative and convincing. Instead of flooding the pages with a vicarious accumulation of appellations that aim to describe something, as nebulous as a mirage, he puts down straightforwardly the psychiatric subdivisions and categories where known etiologies and organic patterns obtain, and then presses on to the so-called functional disasters we know as insanity, and

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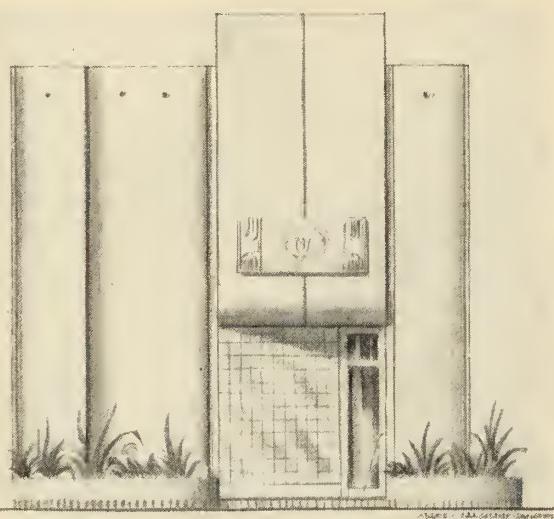
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avoids overstating the etiologic uncertainties in terms of the mere play of words.

Few men have written as straightforwardly on the subject of chronic alcoholism (one man's meat) as has this author.

Note well this quotation from the book: "The chronic alcoholic is a person who cannot face realities without alcohol; and yet, whose adequate adjustment to reality is impossible so long as he uses alcohol." This thrust at the individual's adjustments to life might, I presume, apply to other perverted appetites and false supports.

Strecker pays a sort of left-handed tribute to the possibilities of "focal infection," but does not go all out, by any means, in attributing to areas of sepsis, sweeping etiologic significances reminiscent of other obvious fallacies of recent decades.

This book is very praiseworthy and I heartily recommend it.

E. L. TUOHY, M.D.

**GALL BLADDER AND BILE DUCTS.** Clinical Lectures. Samuel Weiss, M.D., F.A.C.P., Clinical Professor of Gastroenterology, New York Polyclinic Medical School and Hospital; Gastroenterologist, Jewish Memorial Hospital, New York; Consulting Gastroenterologist, Beth David Hospital, New York; Long Beach Hospital, Long Island, et cetera. 504 pages. Chicago: The Year Book Publishers Inc., 1944.

This well-written and beautifully illustrated book pre-

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sents the normal and abnormal anatomy and physiology, history, physical examination, physical diagnosis and radiology of the biliary tract so clearly and practically as to be a valuable diagnostic aid.

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One of the most valuable chapters in this book is a discussion of the technique, interpretation and evaluation of the various liver function tests.

This is a valuable book for either the surgeon or the internist. It is not a large book, but it is so concisely written and the material so well chosen that it gives one a great deal of information without requiring a great deal of reading.

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# Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

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May, 1945

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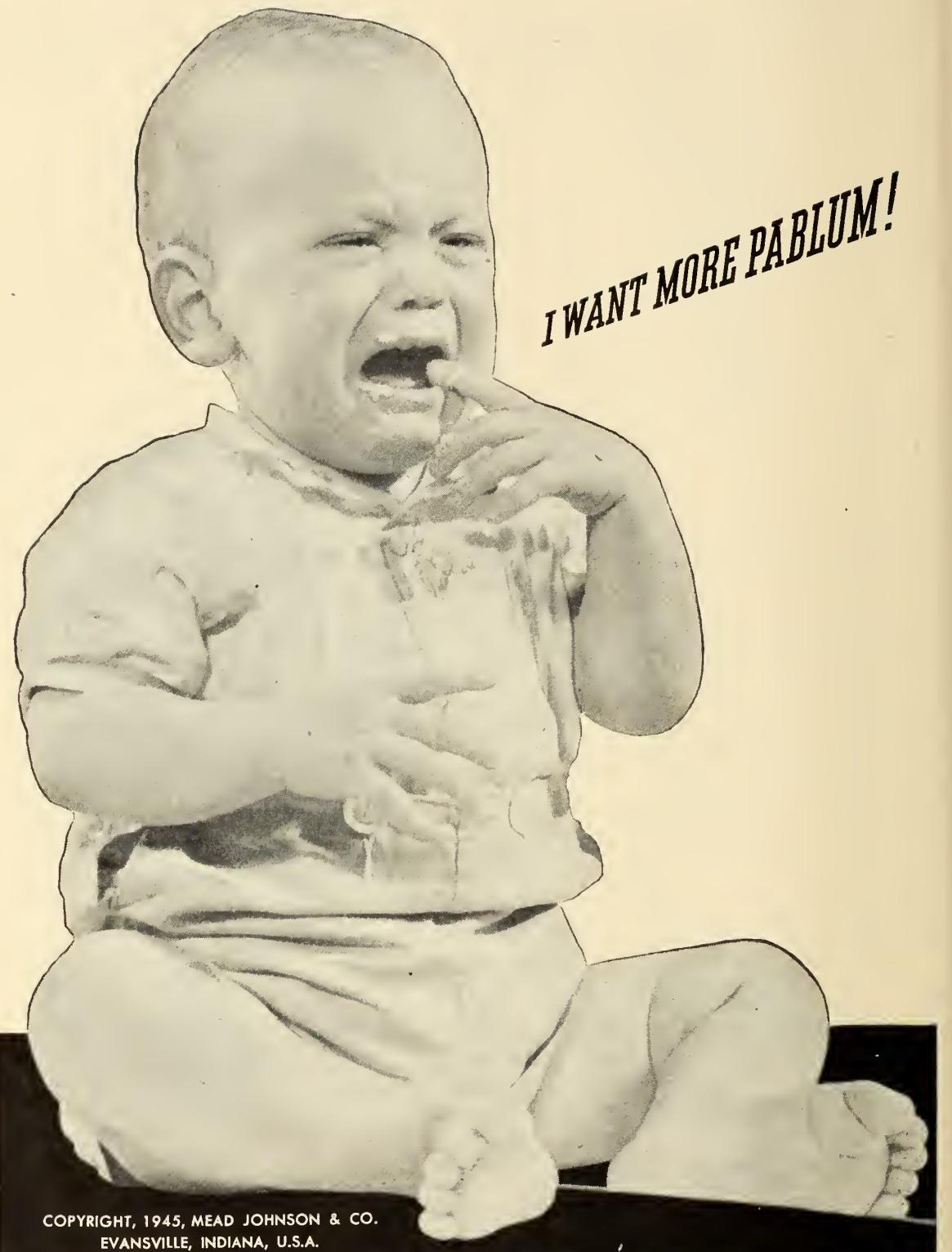
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# Minnesota Medicine

*Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota  
Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society*

Volume 28

May, 1945

No. 5

## BRIEF REVIEW OF THE PRESENT TRENDS AND NEEDS OF MEDICAL PRACTICE

J. A. LEPAK, M.D., F.A.C.P.  
Saint Paul, Minnesota

MEDICINE, like the footsteps of man with whom it is inseparably associated, can be traced far into the background of prehistoric times. The dawn of history casts a dim light on its vague shadows and watches them take form, grow and develop within the sacred temples of our ancient ancestors of India, Egypt and Babylonia. Centuries later, under Greek culture, medicine undergoes a complete metamorphosis. Form, weight and measure under meticulous observation, reinforced by profound ratiocination give it a scientific foundation. Fact replaces faith. The birth and growth of Christianity, however, warms the cold facts of science; altruism cements the structure of medicine; and an all-pervading humanitarianism enriches and ennobles its future course, purpose and destiny. Then as man marches through the centuries, discovering, inventing, developing and improving endless means and methods for better living, medicine, like his shadow, not only shares in these accomplishments, but frequently aids him in wresting additional secrets from nature's unlimited and prodigiously rich reservoir. Slowly and gradually it becomes intermingled inextricably with all phases of individual, group, social, economic and industrial life. Co-operation, co-ordination and adjustment between medicine and the other institutions of human life take place incessantly in its evolutionary processes. And thus, from one man experimenting with a single

herb for medicinal purposes arise through the pages of history embracing centuries, thousands of doctors, dentists, nurses, hospitals, pharmacists and drug manufacturers serving millions and millions of people. With unbelievable rapidity general improvement in medical care forges ahead in the whole world, but in the United States of America it literally reaches a peak of a Golden Era. Yet, while this country is enjoying the best practice of medicine ever known in history of mankind, the government proposes to make a certain change. It plans to federalize medicine so that the public might receive better care and greater benefits. Why? Let us look at the record.

### Physician-Hospital-Public

According to Fishbein, there are today in the United States 186,000 doctors licensed to practice medicine. Over 60,000 are now with the armed forces. The civilians have one doctor for every 1,500 people. In England they have one doctor for every 3,000 and in some parts of Germany one doctor for every 14,000 people. Comparatively speaking, there is no definite shortage of doctors in this country and the public is satisfied with the number and quality but not with the distribution.

There are around 10,000 hospitals in the United States, but if we count the hospitals that are qualified or have 100 beds or more, there are only 6,700. It is generally conceded that hospitals of less than 100 beds operate inefficiently

Presidential Address, Ramsey County Medical Society, Saint Paul, Minnesota, January 29, 1945.

as far as medical care is concerned. Most of the small hospitals owned privately lack proper supervision, and therefore, require no further comment in the present discussion. The larger or qualified hospitals, naturally, according to their ownership, fall into three groups. The first, owned by the federal government, provides 30 per cent of all of the hospital beds in the United States and serves veterans, army and navy personnel, Indians, seamen, inmates and some of the employes of the federal institutions. As noted, these hospitals do not serve the general population. The second group comprises nonfederal government hospitals owned by states, cities, counties and municipalities. They are general hospitals built often by equal contributions from public subscription and public taxes and constitute only about 25 per cent of all the general hospital beds. In some communities, where no other hospital exists, these hospitals admit private patients also and thus receive sometimes as high as 50 per cent of their running expenses from such sources. The third group embraces the voluntary hospitals. In 1943 the voluntary hospitals received about 75 per cent of all admissions to the general hospitals. They operate under a nonprofit charter and form the backbone of the public hospitalization structure. Created by philanthropy, religious groups and public-spirited individuals, they depend exclusively on the pay-patient for their existence. Under ordinary circumstances the voluntary hospitals supply the public with sufficient beds to satisfy all needs. Too many of these hospitals, however, are found in congested and heavily populated centers and not enough in sparsely settled areas. The distribution is faulty.

The last link in the chain involved in the practice of medicine is the public. It receives and pays for medical care and service. Naturally, it must have an adequate income in addition to what it spends on the necessities of life to meet the cost of medical care. Although the income may vary somewhat from year to year for everyone, yet, like the national income, it is very uneven. Michael M. Davis, Chairman of the Committee on Research in Medical Economics, states that in 1935-1936 (average national income during peace) more than one-third of the families had an income of less than \$800.00. Only 2 per cent enjoyed an income over \$5,000.00, and 10 per cent of the population had nearly 36 per

cent, or more than a third, of the total national income. While such uneven distribution of income persists the lower third cannot afford to pay for medical care. It must seek out medical services planned and administered for the indigent. The remedy is economic. The medical profession, however, has contributed freely and generously to the relief of this segment of the population. Computing the cost of the medical services rendered gratuitously to patients at the Ancker Hospital, outpatient departments, dispensaries, and physicians' offices in Saint Paul, a city of 250,000 people, and applying the same yardstick to the nation as a whole, the medical profession gives charitably in service around \$500,000,000.00 annually. Nevertheless this kind of service is unsatisfactory because it cannot be either regulated or distributed equitably. And often too, what one gets for nothing is considered good for nothing. It would be better to get away from the cringing humility, vagueness and uncertainty associated with charity by placing medical care for this section of the population on a businesslike basis. The solution ought to be local. The local governments after raising a certain proportion of the necessary funds could seek state aid and federal grant to erect and equip hospitals in such counties or towns where they might be needed and put aside also a certain sum of money for their maintenance. Physicians, then, either on a part-time or full-time basis could render such people medical services becoming the dignity of free men. In time, perhaps, as this segment of the population would find employment with a better income, a certain portion might fall in the middle third and then participate in a prepayment insurance medical program. The upper third is no problem. It can pay for medical care at once or arrange payment in some instance over a period of weeks or months. The middle third of the population, however, clamors for and deserves some sort of relief from medical cost, especially during catastrophic illness or chronic invalidism. And strange as it may seem, all movements offering relief from medical costs aim primarily to aid the middle third of our population, the federal government not excepted.

#### **Early Attempts to Reduce Medical Costs**

In 1880 prepayment hospitalization was provided for the lumberjacks in Northern Minne-

sota by the hospitals located in Duluth and Superior. America's oldest railroad sponsored in the same year a mutual benefit association for the Baltimore and Ohio railway workers. The first project failed, the second succeeded and has paid to employees 34 million dollars in disability benefits, and to beneficiaries in death benefits \$32,800,000.00. After many successful years the failure of the lumberjacks' hospitalization plan in the event of disease or injury came almost over night, when a certain astute lumberjack identified acute alcoholism as a disease and entered the hospital for the necessary sobering-up processes. Others, when spring came, did likewise, so the hospitalization plan was discontinued. This unpleasant experience retarded hospitalization plans for several decades. The next move came from industry. In 1912, Montgomery Ward of, Chicago purchased a "Group Insurance Policy," which provided life insurance for all its employees. Since 1918, the Endicott-Johnson Shoe Company, Binghamton, New York, "has provided full and complete medical care and hospitalization for all workers and all of their dependents without cost." This is truly an excellent plan. The company operates it and gives the workers and dependents an entirely free medical service with patient-physician relationship, choice of physician, access to specialist and unlimited hospitalization and examination. Then came the realization of the mounting cost of medical service with the advances in medicine from physicians as well as patients. University hospitals and private clinics, like the Mayo Clinic, the Crile Clinic, the Lahey Clinic, arose to meet the challenge. Workers organized "Group Medical Practice" to distribute the cost of medical care. Finally, general and life insurance companies began to nibble at this form of insurance. Slowly and gradually readjustments in the distribution of medical costs were forging ahead among the various groups of workers, employees, and employers in our population when the stock market crashed in 1929, depression followed and the "New Deal" struck everyone in the face. To legislate became a "cure-all." The last decade has seen a great general social revolution. Its effects reach not only our present entire social order, but also will carry over to many future generations. Naturally, when other groups in our social order were subjected to certain changes the medical profession could not be spared. So

on June 3, 1943, the Wagner-Murray-Dingell Bill was introduced in Congress.

The bill makes provision for free general medical special medical, laboratory and hospitalization benefits for more than one hundred ten million people in the United States.

The proposals include a plan to tax all employers for Social Security six per cent of the earnings of all workers (up to \$3,000.00 per year); payroll deductions of six per cent from the income of all employes (up to \$3,000.00 per year); and for the establishment of a fund of more than three billion dollars per year—out of which is to be paid medical care and hospitalization costs for all beneficiaries of the Social Security Act and for all of their dependents.

The bill proposes placing in the hands of one man—the Surgeon General of The Public Health Service—the power and authority:

1. To hire doctors—possibly all doctors—at fixed salaries to provide medical services.
2. To designate which doctors can be specialists.
3. To determine the number of individuals for whom any physician may provide service.
4. To determine arbitrarily what hospitals or clinics may provide service for patients. (N.P.C.)

#### **Recent Studies and Methods to Spread the Cost of Medical Care**

To oppose the proposed federal legislation all the agencies for the reduction of medical costs antedating the introduction of the Wagner Bill became not only more active but many new ones arose also. The Blue Cross hospitalization plan, founded in 1925, by intensifying its program has obtained 50,000 more subscribers every week. State and county prepayment plans became a household word in nearly every state in the union. Insurance companies broadened the scope of sickness, accident, surgical and hospitalization benefits. The most vigorous championship of medical rights and privileges came from the National Physicians Committee for the extension of Medical Service. This organization, created to take over functions which constitutional limitations prevented the American Medical Association from carrying on, "started in 1939 the first of a series of public opinion surveys." The Opinion Research Corporation, of Princeton, New Jersey, was commissioned in July, 1943, to conduct a nationwide survey to ascertain the opinion of the public on: (1) the status of physicians in the community; (2) the adequacy of medical care plans; (3) the availability and acceptance of medical care plans; and (4) compulsory health insurance. Briefly,

this study showed that the majority of the public was satisfied with the medical care and preferred the present status of the physician in the field to federal medical care. The medical care, however, although satisfactory was sometimes too costly for the average family. About two-thirds of the people favored some plan of prepayment insurance. Since 1943 very extensive studies under the leadership of the National Physicians Committee have been undertaken and published in pamphlets like (1) "The American People—What They Think About Doctors, Medical Care and Prepayment Plans"—"A Challenge to Private Enterprise"; (2) "Opportunity for Private Enterprise or Benefits for Business through Co-operative Group Insurance"; (3) "Proceedings of National Conference of Professions-Insurance-Industry on the Extension of Medical Care, Group Insurance and Employer-Employe Co-operation." Every physician who is interested in his profession and what is being done by the professions, industry, insurance and the public to prevent the politicians from destroying the present practice of medicine ought to acquaint himself thoroughly with the extensive studies and the excellent research work of the National Physicians Committee. Its policy reads:

Steps must be taken to make available to the indigent and low income groups the most effective medicine, medical practice and hospitalization that can be provided, and generally—provide the widest possible distribution of the most effective methods and equipment in medicine and surgery.

#### **Program**

The Management Committee has been instructed by the Board of Trustees to secure facilities, additional personnel, and take all necessary steps designed to:

1. Encourage the medical profession to active participation in the development of plans and the more general use of existing facilities to provide for easy payment of insurance against unusual or prolonged illness;
2. Educate the people to the importance, nature and value of prepayment facilities (within the framework of principles approved by the medical profession), now available for meeting the cost of unusual illness;
3. Investigate conditions relating to and inform industry concerning the principles underlying sound participation with employes in prepayment plans for meeting the cost of unusual or prolonged illness and hospitalization;
4. Inform private insurance underwriters of the opportunity that is being offered through co-operation in nationwide efforts to provide group insurance policies for those needing or desiring insurance against the hazards of unusual illness;

5. Encourage and provide state or local financial aid rather than Federal subsidies to insure effective medical care for the indigent;

6. Encourage contributors and friends to a greater degree of participation in the efforts of the National Physicians Committee in this constructive program.

"With the active co-operation of the individuals and the groups directly affected—the Professions, the Manufacturers, the Distributors, American Labor, the Insurance Industry, and American Industrial Concerns—steps can be taken which will bring relief to 100,000,000 people and provide a method of meeting the cost of unusual and prolonged illness and of hospitalization.

The committee has performed an outstanding service to the whole nation and under its excellent leadership, are united today, the professions, industry, business, insurance and most of the public in the fight against the usurping powers of the politicians. Some of the topics which have been discussed, studied or tabulated are: (1) political medicine, (2) individual service, (3) need for prepayment plans, (4) operation of medical plans, (5) people's opinion of plan operation, (6) opinions of physicians, (7) business benefits, (8) sharing the costs, (9) appraisal of group insurance, (10) weakness of group policies, (11) the employes' viewpoint, (12) typical programs and (13) statements of executives of business and industry. There are dozens of tables showing important, detailed and diversified information gathered by various approaches of research covering more than 1,300 firms employing over four million workers.

Two of the many tables are shown herewith.

With offices located recently in Washington, D. C., the Council on Medical Service and Public Relations of the American Medical Association stands ready to aid any congressman seeking information in regard to medical matters. It also examines and studies bills proposed to improve the medical care of the public. Today the American Medical Association under superb leadership maintains offices in Washington also, with similar functions and purposes.

While the American Medical Association holds in very high esteem the work of the National Physicians Committee and watches the growth and development of thousands of prepayment plans, it nevertheless has left the way open for other organizations by setting down a conduct for experiments as follows:

1. All features of medical services in any methods of medical practice should be under

## REVIEW OF PRESENT TRENDS—LEPAK

**TABLE I. ESTIMATES OF TOTAL COVERAGE AND VOLUME OF GROUP INSURANCE IN EFFECT**

**—1943**

	Number of Master Policies	Number of People Covered	Volume of Insurance
Group Life Insurance..	36,000	14,700,000	\$24,000,000,000
Group Accident and Health .....	17,000	6,500,000	107,000,000
Hospitalization' Insurance:			
Stock and Mutual Companies .....	23,200	6,430,000	110,000,000
Blue Cross, Etc.....	170,000	17,000,000	110,000,000
Surgical Benefits:			
Stock and Mutual Companies .....	15,200	4,566,800	30,000,000
Nonprofit Medical Plans .....	20,000	3,000,000	36,000,000
Or a total of nonduplicated insurance covering more than 25,000,000 individuals.			

the control of the medical profession.

2. No third party must be permitted to come between patient and doctor in any medical relation.
3. Patients must have absolute freedom to choose a legally qualified doctor of medicine.
4. The methods of giving service must retain a permanent, confidential relation between the patient and family physician.

It is apparent from the foregoing discussion that a large part of the public, many physicians, the American Medical Association and the National Physicians Committee united with the professions, insurance and industry are all working diligently together to find ready and accessible medical care for the whole population in order to defeat the proposed plans of the Federal Government supported by labor which might destroy the present form of medical practice. There exist, however, other divisions and organizations, especially among physicians, which would oppose Federally instituted medical care by methods never yet tried by the medical profession in this country, namely, boycotting. Such measures are advocated by the Association of American Physicians and Surgeons, founded in 1943, in a recent circular letter which read in part:

### Simple Logic

Reduced to the simplest syllogistic form, the AAPS reasoning is as follows:

State medicine is a system that operates to distribute medical care;

Medical care cannot be distributed without the participation of physicians;

Therefore a system of state medicine cannot operate without the participation of physicians.

The courts have always upheld the right of an or-

**TABLE II. THE OPERATION OF MEDICAL CARE PLANS**

In the United States there are thousands of prepayment medical care and hospitalization programs successfully operating. Roughly, these can be classified into eight types as follows:

1. Company or Employe Medical Service Plans
2. Regular Insurance Company Group Policies
3. Medical Society Approved or Sponsored Plans
4. Union-Sponsored Plans
5. Co-operative Groups
6. Consumer-Sponsored Plans
7. Farm Security Administration Operations
8. Private Group Practice Clinics

It is estimated that such programs now provide prepayment facilities for approximately 25,000,000 people.

#### Company or Employe Medical Service Plans:

- (a) Endicott-Johnson which owns and operates three clinics and a hospital and furnishes free to each worker and all dependents all medical care and hospitalization.
- (b) Eli Lilly and Company which pays the total cost of insurance-disability, life, surgical care and hospitalization—for employees and their dependents.
- (c) Abbott Laboratories which pays a substantial part of the cost of insurance disability, life, surgical care and hospitalization—for all employees and their dependents.
- (d) Henry Kaiser who owns and operates clinics and hospitals and furnishes medical care and hospitalization for workers on a voluntary basis.

**State-wide, Physician-Sponsored Medical Care Plans:**  
Michigan and California Medical Service organizations which provide surgical and/or medical care to groups on a prepayment basis.

**Local, Physician-Sponsored Medical Care Plans:**  
Kansas City, Buffalo and others, which duplicate for local areas the service of state-wide groups.

ganization of individuals to do whatever an individual may lawfully do. Even the Wagner-Murray-Dingell Bill respects the right of the individual physician to refuse participation in its scheme for state medicine. It makes provision only for our voluntary participation. Hence:

An individual physician may lawfully refuse to participate in a system of state medicine.

An organized group may lawfully do anything an individual may lawfully do;

Therefore physicians as an organized group may lawfully refuse to participate in systems of state medicine.

And test this:

Systems of state medicine require more medical service and therefore more physicians than systems of private practice;

There are not more than enough physicians to supply the services required under the present system of private practice;

Therefore a system of state medicine would re-

quire the participation of at least a substantial majority of physicians.

Final conclusions, based upon the above conclusions:

Physicians may lawfully organize to refuse participation in systems of state medicine, which cannot operate without the participation of at least a majority of the physicians.

The AAPS is an organization of physicians who contract and agree not to participate in systems of state medicine;

Therefore when a majority of the physicians of the nation become members of the AAPS, systems of state medicine cannot be operated.

Very recently, observations showed the federal government taking a detour from the original plans proposed for medical care. In the first week in January, 1945, the Senate Subcommittee on Wartime Health and Education, after a two-year study of the State of the Nation's Health, finally rendered a report. The highlights in the report are quite startling. Of the 14,000,000 men caught in the draft,

- (1) 2,000,000 were fit physically,
- (2) 6,500,000 were accepted despite defects,
- (3) 2,250,000 were remediable,
- (4) 3,500,000 were hopelessly unfit.

In addition it found that:

- (1) About 40 per cent of the United States counties have neither full-time public health service nor any registered hospitals.
- (2) Distribution of doctors is uneven; eight times as many are in cities.
- (3) There are only 3,000 psychiatrists in the United States: not enough to treat the mental, let alone to carry on preventive work among children.
- (4) High quality medical care was available on a charity or low-cost basis to the poor in relatively few places.

To correct these deficiencies, the Senate Committee, headed by Senator Claude Pepper, after rejecting tax-supported medicine, voluntary insurance, compulsory insurance and other schemes found in the Wagner-Murray-Dingell Bills, proposed federal grants-in-aid to the state for improving local health services. It would "build hospitals and health centers, organize health departments where none exist, provide sewage and water supply systems, milk pasteurization plants, scholarships and loans to medical and dental students and complete medical care for the needy (through extension of Social Security Allotments)." (*Time Magazine* 1-15-45.)

### **Summary and Conclusions**

1. In the United States of America flourishes, to the amazement of all of the other nations of the world, the most advanced and progressive type of medicine.

2. It serves adequately, however, about two-thirds of the population. To the other portion of the public it is not always accessible, because that segment of the population is either indigent or lives in areas where physicians are few and hospitals are often absent, and therefore, the general health of the nation suffers.

3. Remedies to relieve or spread the cost of medical care began as early as 1880. After the hospitals showed the way, industry followed and eventually the public and the physicians became all-absorbed in the issue. In 1943 the federal government manifested an unusual interest in the supply and cost of medical care by proposing the Wagner-Murray-Dingell Bill.

4. Research studies show beyond any doubt that the majority of the public wants adequate medical care for the whole population. Moreover, it clamors for the easement in medical costs. The choice is no longer between individual activity and government activity, but between "two types of institutional responsibility, private and public."

5. The private responsibility for medical care headed by the profession, industry, public and insurance companies consists of hundreds of pre-payment insurance plans varying tremendously in scope in their benefits to, and protection of, the public health. Some of these plans are still in the experimental stage; others seem to already rest on a solid foundation. The staunchest champion of private responsibility for medical care is the National Physicians Committee.

6. The most recent efforts to assume public responsibility for medical care occurred in January, 1945, in the proposal by Senator Claude Pepper—a very tiny proposal compared with the Wagner-Murray-Dingell Bill—to provide grants-in-aid to states for improving local health services.

7. If eventually the federal government should succeed in taking over the medical profession the Association of American Physicians and Surgeons plans to have a sufficient number of doctors in the organization to boycott any such venture. This is not a laudable solution to anticipate. While it may be lawful, it has definite in-

herent weaknesses. In England when the panel system went into effect, although many physicians were opposed to it, they nevertheless "fell into line" in a relatively short time, because soon embarrassed financially, they could not "stick it out."

8. It appears that a reasonable solution of adequate medical care for the whole population should take into consideration the economic situation of the people. For the upper one-third from the standpoint of income, obtaining good medical care is no problem. In the medical care of the lower one-third the local community and government ought to have the primary interest, control and administration. To erect, equip and maintain hospitals or centers of health, state-aid or federal grants-in-aid similar to what Senator Pepper recently proposed (without any strings attached) ought to be feasible. The middle third could receive adequate medical care on prepayment plans,

suitably adjustable to the industry, locality, hazards, et cetera, under private control, management and administration.

9. It is important to realize that medical care of the whole nation is in a state of flux. Under such circumstances it behooves the medical profession to be wide awake, to seek out each movement, current, or trend, or attempt to solve problems of medical care, no matter where they may arise, in order to lead, guide or direct remedies into a desirable channel. The humblest physician understands medical care better than the proudest politician and therefore should not shrink in wresting the reins from alien hands.

10. If we lose leadership in medicine it will be our fault. And we cannot fail if we have the public interest at heart. Let us work with a well-informed and reawakened public and we must succeed.

## RINGWORM OF THE SCALP

CARL W. LAYMON, M.D.  
Minneapolis, Minnesota

**R**INGWORM of the scalp is a term which is applied to superficial infections caused by several different fungi occurring chiefly in children before the age of puberty. The outstanding signs are the presence of patches of partial alopecia, stubby hairs due to breakage, lack of luster of infected hairs and varying degrees of inflammation. Certain forms of tinea capitis may spread relatively rapidly and even assume epidemic proportions unless the disease is recognized early and treated properly. It is thus important both medically and economically that the practitioner be familiar with ringworm of the scalp so that affected individuals may be isolated or cared for in such a way that spread of the disease may be reduced to a minimum.

It is well known that fungi flourish best in the horny layer of the skin's surface, since dead, keratinized substances offer the most favorable conditions for their propagation. It is not surprising then that the skin and its appendages, the hair and nails, are frequently affected. Bloch<sup>2</sup> and his school and others including George Lewis<sup>4</sup>

of New York and his co-workers have established the general rule that fungi which attack hairs can be divided into two main groups: (1) those which are highly contagious among human beings and less contagious in certain species of lower animals, and (2) those which are highly contagious in lower animals and less contagious in humans. Wise and Sulzberger<sup>10</sup> have termed the first group "anthropophilic" fungi and the second group "zoophilic" fungi. The types of tinea capitis resulting from infection by these two main groups of fungi vary not only in their clinical characteristics and course, but in their epidemiology and degree of contagiousness among children. A still more important difference in the infections due to anthropophilic and zoophilic fungi is their response to treatment. This difference is so important that identification of the causative organism is absolutely vital in order to intelligently manage each individual case. Although, as previously mentioned, ringworm of the scalp may be caused by many fungi, by far the majority of cases are produced by microsporon audouini (anthropophilic) and micro-

From the Division of Dermatology, University of Minnesota, H. E. Michelson, M.D., Director.

sporon lanosum (zoophilic). Infections caused by microsporon audouini are by far the most important because they are of the epidemic type and are resistant to forms of treatment except x-rays.

For simplification, tinea capitis can be discussed under three main headings:

(1) Infections caused by the aforementioned microsporons.

(2) Infections caused by trichophytons which penetrate the hairs (endothrix type).

(3) Kerion, a highly inflammatory type of infection, caused in most cases by trichophytons which do not penetrate but grow around the hairs (ectothrix type). Occasionally other fungi produce kerions.

### **Microsporon Infections**

Microsporons, according to Lewis and Hopper<sup>6</sup>, cause about 80 per cent of all cases of ringworm of the scalp in New York. Microsporon audouini (anthropophilic) and microsporon lanosum (zoophilic) were about equal in incidence. Benedek and Felsher<sup>1</sup> in Chicago, however, on the basis of a study of 140 cases, found that m. audouini was responsible for 81.5 per cent of the cases, and m. lanosum for only 12.2 per cent of the cases. In Philadelphia, Livingood and Pillsbury<sup>7</sup> found m. audouini in 96.2 per cent and m. lanosum in 3.1 per cent. It is the consensus among dermatologists in this vicinity that until the past few months almost all cases of ringworm of the scalp have been caused by the zoophilic organisms m. lanosum and trichophytons of the ectothrix type. Recently, however, as seems to be the case in other mid-western cities, there has been a sharp rise in the incidence of infections caused by m. audouini, a fact which should be of great concern to all practitioners since these infections are usually refractory to all forms of therapy except epilation by means of roentgen rays, while infections produced by zoophilic fungi (m. lanosum and others) as a rule, can be cured by topical applications alone.

Furthermore, m. audouini infections are highly contagious among children and spread rapidly in families and schools. Microsporon infections are characterized microscopically by the mosaic arrangement of tiny spores about the infected hair.

M. audouini causes so-called "gray patch"

ringworm. The infection begins insidiously in children under the age of puberty (almost never in adult life), and is usually first noted by parents or teachers who discover multiple small areas on the scalp in which the hair is lusterless and stubby. As a rule, there is slight scaling but only slight inflammation, a point which is important in attempting a clinical differentiation from the usually more inflammatory infections produced by m. lanosum. Benedek and Felsher<sup>1</sup>, however, did not find this sharp distinction in their cases since many inflammatory lesions were produced by m. audouini. In fact, in their series, m. audouini produced kerion in seven patients as compared to five due to m. lanosum. All in all, however, it is the consensus that lack of inflammation points to infection by m. audouini.

In m. lanosum infections, there is frequently a history of contact with cats, dogs, or calves. There is usually pustulation and considerable crusting. The infection, though most common in children, may occur at all ages. The number of lesions is usually greater than in m. audouini infections. Although lesions on the glabrous skin may be caused by m. audouini, they are much more commonly produced by m. lanosum.

### **Trichophyton (Endothrix) Infections**

Infections of this type are rare and hence will not be discussed in great detail. These fungi are characterized microscopically by the easily recognized chain formation of the spores in contrast to the mosaic arrangement of the spores in microsporon infections. Trichophytons of this type are anthropophilic fungi and cause a refractory type of ringworm of the scalp. Fortunately however, as in infections due to m. audouini, there is a high incidence of spontaneous cure at puberty. Rather than describe the clinical features in detail, I shall emphasize that it is important to cultivate the organisms in order to determine appropriate therapy, bearing in mind again that infections produced by anthropophilic organisms require epilation by x-rays.

### **Kerion**

Kerion is a highly inflammatory carbuncle-like granuloma which is caused most commonly by trichophyton gypseum (zoophilic; ectothrix). It occurs usually on the scalps of children or on the bearded area or other hairy regions of adult males.

As a rule the lesion begins as a patch of ordinary ringworm which, within a few days, becomes red, edematous, boggy and crusted and oozes pus from multiple orifices. The single

### Discussion

The main purpose of this paper is to emphasize the alarming increase in the number of cases of ringworm of the scalp due to the anthropo-



Fig. 1. Tinea capitis caused by *m. audouini*. Note the patchy alopecia with practically no signs of inflammation.

Fig. 2. Tinea capitis produced by *m. lanosum*. Lesions are erythematous, edematous, pustular and crusted.

lesions may become several inches in diameter and multiple individual lesions may coalesce to form a large granuloma. In contrast to carbuncle, pain is usually slight. The tendency is toward spontaneous cure in two or three months following shedding of the hairs due to the inflammatory reaction. Microscopic examination of the pus is usually negative while cultures usually disclose the causative fungus.

philic fungus *m. audouini* and to caution physicians against trying to cure them by means of topical applications alone. This increase in incidence of this form of tinea capitis may assume epidemic proportions in Minnesota especially in the larger centers of population if physicians do not recognize the disease and handle it properly. Such epidemics have been noted in eastern cities in the past few years and are now raging in Chi-

cago and other midwestern cities. It is absurd to assume that every practitioner can become an expert mycologist and this is unnecessary in order to cope with the problem which faces us.

If the doctor's index of suspicion is raised he will immediately think of ringworm of the scalp (due to *m. audouini*) when superficial, round or oval, single or multiple, almost noninflammatory and nonpus forming areas of partial baldness are seen on a child's scalp. No fine details of differential diagnosis need crowd the physician's mind since there are only two procedures which must be carried out in order to settle the diagnosis.

The first is the demonstration of the pathogenic fungus by direct microscopic examination of the infected hairs or scales. Broken off or thickened hairs at the edges of the lesions should be carefully selected and removed by gentle traction with a small forceps. Infected stumps are easily withdrawn. These are placed on a glass slide and a drop or two of 10 per cent potassium hydroxide is added followed by a cover slip. The slide is passed through the flame of a bunsen burner three or four times and then examined microscopically under high-dry power. If the slide is not clear it may again be heated. Crystallization of the hydroxide occurs on drying and interferes with proper examination. In this event more water should be added to redissolve the crystals. It is impossible to determine exactly the type of fungus by means of this examination, but it is possible to establish the diagnosis of ringworm.

The second step is to prepare cultures which may be sent to a mycologic laboratory in order to determine the exact type of fungus responsible for the infection. Infected material is obtained in the same way as described for making microscopic preparations and is inoculated on broth or agar mediums. (The Difco Company, 920 Henry Street, Detroit, makes a suitable commercial medium.) An expert mycologist can, within a week or two, identify over fifty types of fungi.

If the infection is found to be caused by an anthropophilic organism (usually *m. audouini*—occasionally an *endothrix trichophyton*) the physician should realize *at once* that x-ray epilation is required and that it is a serious mistake to use topical therapy alone.

A few years ago Peck and Rosenfeld<sup>9</sup> brought

out the fact that certain fatty acids ordinarily found in human sweat are of distinct value in the treatment of various fungus infections of the human skin. Salts of propionic acid and undecylenic acid seem especially noteworthy. Keeney and Broyles<sup>3</sup> reported that two of three cases of *tinea capitis* produced by *m. audouini* were well after the application of a 10 per cent sodium propionate ointment to the scalp three times daily for seven weeks. Further studies utilizing this type of therapeutic approach are indicated.

Excepting x-rays, the only other means of producing a defluvium of the hair of the scalp is by the administration of thallium acetate orally. The therapeutic dose, however, is not far removed from the lethal dose and so many grave toxic reactions and even deaths have resulted from the drug that the advisability of its use in ringworm of the scalp is highly questionable.

Epilation of the scalp with x-rays is a procedure which should be carried out only by a thoroughly trained and experienced expert. Thousands of cases have been epilated in large clinics in New York and other centers without accident, but if errors are made, permanent epilation may result. It is not within the scope of this paper to outline the details of x-ray epilation including the necessary preparations prior to therapy and the after-care following administration of the rays. Those who are interested may refer to MacKee's<sup>8</sup> textbook on "X-rays and Radium in the Treatment of Diseases of the Skin."

Another procedure which is an aid in diagnosis and followup care of the patient with microsporon infections is examination with the Wood light. The latter utilizes ultraviolet light filtered through a special glass filter containing nickel oxide. (Such lamps are manufactured by the Westinghouse Electric and Manufacturing Company, Long Island City, New York, and the Strobelite Company, New York City.)

Tissues infected by fungi, as well as other substances such as scales, vaseline and blood give rise to a characteristic fluorescence when exposed to filtered ultraviolet rays. With experience it is possible to differentiate the fluorescence from various materials. Hairs infected by microsporons appear as bright, bluish-green stubs under the light. The Wood light then not only reveals the presence but shows the extent of the infection. Sometimes it is surprising to note widespread involvement under the light when clinical

examination suggested that only one or two infected patches were present. Following epilation the child should not be considered cured until two weekly examinations under the Wood light fail to show the presence of infection. A final examination a month later is advised by Lewis and Hopper.<sup>5</sup>

Topical therapy alone, using fungicides such as salicylic acid, ammoniated mercury, sulfur, anthralin and others, cure most cases of ringworm of the scalp caused by "animal" organisms such as *m. lanosum* and *trichophyton*s of the ectothrix type. Three weeks to three months are required depending upon the severity of the case.

### Summary

In Minnesota there is an alarming increase in the number of cases of ringworm of the scalp caused by *m. audouini*. In combating a similar but larger epidemic in New York, Lewis, Silvers, Cipollaro, Muskablit and Mitchell<sup>6</sup> made the following excellent suggestions:

(1) Co-operation between the Health Department, dermatologists, clinics and school authorities is essential.

(2) The Health Department should lead by declaring the disease reportable, surveying schools periodically, setting up diagnostic clinics where the disease is prevalent and disseminating information to the public.

(3) Filtered ultraviolet rays (Wood light) are essential in case finding and in determining when cure has taken place.

(4) Infections caused by *m. audouini* should promptly receive x-ray therapy. Local measures are usually ineffective.

(5) Communities free of the disease should take active steps to prevent it or localize any nidus that appears. The small expense necessary to inaugurate and sustain such a plan is in no way commensurate with the probable benefits to be obtained from such a far-sighted effort in the interest of public health.

### Bibliography

1. Benedek, Tibor, and Felsher, I. Myron: Epidemiology of tinea capitis. *Arch. Dermat. and Syph.*, 49:120, 1944.
2. Bloch, Bruno: Allgemeine und experimentelle Biologie der durch Hyphomyceten erzeugten Dermatomykosen. *Handbuch der Haut u. Geschlechtskrkh.*, 11:300, 1928.
3. Kenney, E. L., and Broyles, E. N.: Sodium propionate in the treatment of superficial fungous infections. *Bull. Johns Hopkins Hosp.*, 73:479, 1943.
4. Lewis, George M., and Hopper, Mary E.: Ringworm of the scalp. III Clinical and experimental studies in types of infection. *Arch. Dermat. & Syph.*, 35:460, 1937.
5. Lewis, George M., and Hopper, Mary E.: An Introduction to Medical Mycology. Ed. 2. Chicago: The Year Book Publishers, Inc., 1943.
6. Lewis, George M., Silvers, S. H., Cipollaro, A. C., Muskablit, A., and Mitchell, H. H.: Measures to prevent and control an epidemic of ringworm of the scalp. *New York State J. Med.*, 44:1327, 1944.
7. Livingood, C. S., and Pillsbury, D. M.: Ringworm of the scalp: prolonged observation, family investigation, cultural and immunologic studies in 130 cases. *J. Invest. Dermat.*, 4:43, 1941.
8. MacKee, George M.: X-rays and Radium in the Treatment of Diseases of the Skin. Philadelphia: Lea & Febiger, 1938.
9. Peck, S. M., and Rosenfeld, H.: Effects of hydrogen ion concentration, fatty acids, and vitamin C or growth of fungi. *J. Invest. Dermat.*, 1:237, 1938.
10. Wise, Fred, and Sulzberger, Marion B.: Modern treatment of common fungous infections. *Year Book of Dermat. and Syph.*, p. 12, 1938.

## NURSING IN RURAL HOSPITALS

BURTON C. FORD, M.D.  
Marshall, Minnesota

**W**E are all interested in the care of the sick. Hospital and nursing service have become an integral part of that care. The trained nurse has given nursing the human or, shall we say, the Divine touch, and made the hospitals desirable for patients with serious ailments regardless of their home advantages.

Today the rich patient, who can pay the price, or the poor patient who can pay nothing, may secure the highest services in sickness. But how about the great middle class who, neither rich nor poor, would be glad to preserve their self-

respect by paying to the limit of their ability? Can a hospital give the minimum standard care to its patients without the most highly trained help? We believe it can. If the hospitals have competent physicians and surgeons and a well-trained superintendent of nurses with intelligent and willing student nurses, much can be accomplished to attain this standard of care in a comparatively short time. Much depends upon the individual student, whether she has a sincere desire or a compelling force from within or without to give the necessary care to the sick patient.

The patient sends for the physician first. The physician secures a nurse, if desired, or sends

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the patient to the hospital. The doctor must assume the responsibility, even though the patient dies from an accident in care. Therefore, if we train our own nurses, they know what we expect of them in the care of our patients. In the smaller hospitals, the doctors are much closer in touch with their patients; therefore they keep better informed as to the condition of their sick patients.

Nursing is as old as mankind. It is perhaps the most inborn attribute of the woman's life. The word nurse comes from the Latin "nutrio" signifying "to nourish at the breast." From this original meaning it has come to be applied to all who care for others during days of sickness and suffering. No group of women, such as the Registered Nurse, can ever take the term nurse to apply exclusively to themselves. It belongs to all women, of all races and creeds.

Nursing is primarily a thing of the heart rather than the mind. It will remain an art of technique which consists of securing as much physical and mental comfort for the patient and family as possible. Nursing is not primarily one of the learned professions, such as the Arts, Sciences or History. A college degree is not necessary. A woman may have all the knowledge and still not make a good nurse, or she may have little knowledge, as far as schooling is concerned, and be a wonderful nurse. Nursing is not a trade like that of a mechanic or a carpenter. A carpenter is a carpenter but if he goes to college, he becomes an engineer or an architect. Now nursing is but one thing; the art of taking care of the sick, and it does not require a college degree to master the art. There is just as great a need today for a capable trained practical nurse as there ever was.

It has been our opinion that the qualifications for a good nurse are character, good health, a strong constitution and physical endurance. A high school education is desirable but not absolutely essential for the success of a good nurse. Any intelligent girl or woman can master the art of nursing in a year or two. Sometimes a liberal education is of more importance than an academic degree because it fits a nurse into the interest of her patients. She must learn to assume definite responsibilities and, at the same time, learn to refuse to accept responsibilities which are not rightfully hers.

The practical trained nurse is often better

liked in private cases than any others because she has been dealing with the problems of the home and is proficient in household management, whereas, the registered nurse has been completing her high school education and from three to five years of college and hospital training, and although her training has been efficient, she has had little in the way of home management.

Experience has shown that we have had better professional ethics displayed by our trained nurses than with most of the neo-physician's embodied in the highly trained registered nurses. They carry out all orders, as directed, and there is no presumption on their part of outlining the management of the case and suggesting methods of treatment. She won't try to impress the patient by trying to take over some of the doctor's duties as well as giving nursing care.

We have conducted a Practical Nurses' Training School in the Marshall Hospital since 1912. Our student nurses are selected from all walks of life. A high school education is desirable but not essential to enter our training school. We try to have eight nurses in training so that two new students enter training each six months. This gives us two senior nurses at all times. This procedure has many practical advantages because the seniors act as instructors for the beginners and they also give a great deal of nursing care to the patients in the hospital. The senior nurses are used, if necessary, for special duty and are taken into the homes for home obstetrics. Most of the last six months of training is spent in surgery and obstetrics. During this time they are given instruction as instrument nurses, preparation and sterilization of surgical supplies; the giving of anesthetics and assisting at operations when necessary.

The required course of training could be completed in less than two years' time but by this system we have an opportunity to give these young women a more thorough training. We are undoubtedly a little selfish in this respect because we receive in return for their training a certain amount of nursing care. Our student nurses are furnished their uniforms, room, board and laundry and in addition we pay them \$8.00 per month for day duty and \$10.00 per month for night duty. The students purchase their own books.

The student nurses work seven days a week from seven to seven with two hours off each day

and half days once a week. They attend lectures from 7 to 8 p.m. six days a week for nine months each year. The practical nursing is given by the superintendent of nurses with bedside care directed by the staff doctors.

Our superintendent of nurses is a woman we have trained and who has been with us for twenty-four years. She gives the practical nursing instruction to the students. She conducts the classes in The Art and Principles of Nursing and Dietetics. She administers all the general anesthetics and has general floor management of the hospital. You men who have operated a small hospital know what a treasure this type of nurse is to any institution. It becomes a part of them and they do a grand job and never complain regardless of how many hours they give to the care of the sick. How many registered nurses on the forty-eight hour a week schedule would do this for humanity?

The teaching of the subjects are conducted by the physicians on the hospital staff. The students are given oral and written examinations at frequent intervals. Completion of studies in the following subjects are required for graduation:

1. Anatomy and Physiology, Text: Kimball, Gray, Stockpool.	36 hours
2. Obstetrics for Nurses, Text: DeLee and Comer	18 hours
3. Materia Medica for Nurses, Text: Dock and Quimby	18 hours
4. Dietetics, Text: Pattee	18 hours
5. The Art and Principles of Nursing, Text: Pope and Young	72 hours
6. Toxicology,	12 hours
7. General text: Reference Hand Book for Nurses. Amanda K. Beck and Lyla M. Olson.	

Upon completion of the required courses the graduates are given a diploma of graduation and an enameled nurse's pin with the nurse's name and date of graduation engraved on the back.

In the interest of the sick we strongly advocate the return to a two-year nursing program in the smaller hospitals. We would like to suggest that a definite standard training course be recommended for general use throughout the state, especially for the rural hospitals. We feel that the State Medical Association should appoint a committee of operating doctors of small

hospitals and small hospital superintendents to formulate such a practical training school program which is so essential to our patients and ourselves.

In conclusion, I would like to leave a few thoughts for our registered nurses. What can we do to maintain the professional life and dignity of our present four- and five-year graduate nurse program; can we help them to help themselves? They are overtrained for nurses and undertrained for physicians. There is a definite place for these graduates and by virtue of their advanced and specialized training we must look to them as our chief nurses in our hospitals and as physicians' aids. They are the nurses, too, who are to enter the Public Health, Industrial and Community nursing services.

Practical trained nurses should receive competent and experienced graduate supervision in the hospitals. To secure adequate graduate nurse supervision is one of the most important functions of efficient hospital management. Supervision of the undergraduate in the two-year nursing program means much more than the name implies. It means the establishment of efficient relationship of nurses, patient and medical service. To do this successfully requires tact, ability, education and experience not possessed by the undergraduate. The value of the superintendent of nurses lies in her understanding of her work. The superintendent forms the necessary connecting link between the instruction received in the classroom and its application at the bedside of the patient.

When the hospital is dependent upon its school of nursing for all or nearly all of the nursing care of its patients, it becomes necessary that the students shall have thorough instruction and competent supervision.

Nursing service helps restore the patient to his normal physical condition, enables him to continue the ordinary pursuits of life and promotes his happiness and well-being. It must be the best nursing service our hospitals can furnish.

### References

1. Clayton, C. Lillian: Should all undergraduate nursing be supervised by an experienced graduate nurse? *Bull. Am. Coll. Surg.*, 6:28, 1922.
2. Mayo, Charles H.: Can a hospital attain the minimum standard with what is considered an incompetent nursing staff? *Bull. Am. Coll. Surg.*, 6:26, 1922.
3. National Association of Nursing Attendants: *The Art of Nursing*. Cedar Rapids, Iowa: N.A.N.A.
4. Riddel, Mary M.: What constitutes competent and sound applied nursing service in our hospitals today? *Bull. Am. Coll. Surg.*, 6:29, 1922.

## LOCAL HEALTH SERVICE—A PROPOSAL OF THE AMERICAN PUBLIC HEALTH ASSOCIATION

HAVEN EMERSON, M.D.  
Visiting Professor of Public Health  
University of Minnesota  
Minneapolis, Minnesota

TO avoid misunderstanding in the use of terms and to provide a reasonably precise basis for discussion, let us agree that the purpose of public health services is to apply the sciences of preventive medicine, through government, for social ends. This excludes concern for the illness of the individual and its treatment by the practitioner of medicine, except in respect to the bearing of the particular case of disease upon the occurrence of previous or subsequent cases related to it by some common or preventable factor. This definition excludes from the field of public health as a function of civil government, the organization, financing and distribution of services for diagnosis and treatment of general sickness.

Representative civil government is the creation and should be the servant of society, not the benefactor or agent of the individual. Accepting this limiting definition for our present purposes, we can specify the six basic services required and authorized by law under the police powers reserved by our constitution to the sovereign states. These six functions will be found to be undertaken with more or less success wherever government has accepted the responsibility and seriously attempted to make effective the knowledge of the sciences of preventive medicine. They are: (1) Vital Statistics, the recording, tabulation, interpretation, analysis, and publication of natality, morbidity and mortality; (2) Control of communicable diseases, acute or chronic, sporadic, endemic or epidemic; (3) Environmental Sanitation, including food and milk control, drugs, and the conditions under which people work for their livelihood; (4) Public Health laboratory services; (5) Protection of maternity, infancy and childhood, the field of human genetics, reproduction and replacement; (6) Health Information other than as provided for in public schools or institutions under educational authority of the state.

There are four levels of health administration affecting the people of the United States:

1. International, by sanitary conventions and

by agreements as to standard products and practices, and epidemiological services.

2. *Federal*, in respect to foreign and interstate commerce, standards for biologicals, advisory specialist consultation and emergency aid at request of states, grants-in-aid for state and local health services.

3. *State*, for standards of personnel and performance, consultant, advisory, laboratory, statistical, engineering and educational services. Operation of district health organizations and supervision of standards of local health performance, together with financial aid to local governments.

4. *Local*.—The actual performance of the six standard health functions: Vital statistics, communicable disease control, environmental and industrial sanitation; public health laboratory service; maternity and child hygiene; health education. These are direct services to or for persons, families and communities, within the jurisdiction of some unit of local government, village, town, city, county, or other.

About 41 million of our people are living in communities where there is no full-time medically directed local health service, and many of these communities have either no personnel, no health department, no health board or only part-time employees who have no professional or vocational training for the work.

To correct this and meet the spirit of resolutions passed by the House of Delegates of the American Medical Association in June, 1942, and by the Governing Board of the American Public Health Association in October, 1942, and by the State and Provincial Health Officers of North America in March, 1944, a committee on Local Health Units was appointed by the American Public Health Association to study the situation and present a plan for total coverage of continental United States with an adequate local health service.

The report will be published by the Commonwealth Fund in June of this year.

The following three essentials of the proposal

are assumed: (1) that one dollar per capita is not more than any but the poorest community can afford per annum for local public health services; (2) that the medical health officer should receive a salary approximately the equal of the net professional earnings of a good internist or surgeon of the vicinity; (3) that to justify such a qualified health officer there should be certain essential kinds and numbers of assistant full-and part-time personnel.

The smallest unit of population that can support such a local health department and its staff is one of about 50,000 persons. To do a good basic minimum local health service for 50,000 people there is required a group of sixteen full-time employees: one health officer, ten public health nurses, one sanitary engineer and one sanitarian of nonprofessional grade, and three clerks. Part-time clinical services for tuberculosis, venereal disease, and child hygiene and part-time dental services will be needed, and diagnostic laboratory services at local or state expense.

Larger units of population can afford statistical clerks, full-time bacteriologists, veterinarians, full-time dentist or dental hygiene and health educator personnel within the dollar per capita.

There are in our forty-eight states about 38,000 jurisdictions of local government apart from school districts, some with as few as 150 persons. This number includes 3,070 counties, many of which have populations far below 50,000. Less than 1,000 of these have full-time local health departments now. The problem before the committee was to suggest such combinations of adjacent local government jurisdictions as would include a minimum of 50,000 population each, using the county as the least practicable unit of local government and in all instances including any city in a county within a single or multi-county health unit.

In collaboration with the state health officers, 1,197 units were agreed upon in principle covering the forty-eight states and the District of Columbia.

Of these suggested units

1. 36 (3.0 per cent) have populations of less than 30,000.
2. 130 (10.9 per cent) have populations from 30,000 to 45,000.
3. 1,031 (86.1 per cent) have populations of 45,000 or more.

## LOCAL HEALTH PERSONNEL AND SERVICE COSTS

U.S.A.

	Present	Proposed
Full-time Medical Health Officer...	2,269	2,060
Part-time clinicians.....	4,655	6,140
Public Health Nurses.....	13,740	26,380
Sanitary Engineers (Public Health)	300	1,325
Sanitarians .....	4,691	3,900
Clerks .....	4,596	8,446
Expense (total) .....	\$77,262,600*	\$127,391,300*
Per capita .....	61c	97c

\*Of which 21 per cent are other than salaries.

## LOCAL HEALTH PERSONNEL AND SERVICE COSTS

MINNESOTA

	Present	Suggested
Administrative Medical Officers full-time.....	26	22
Part-time Health Officers.....	1,626	..
Part-time Clinicians.....	65	89
Public Health Nurses.....	251	562
Engineers .....	9	12
Sanitarians .....	52	98
Clerical Workers .....	81	185
Laboratory workers .....	15	76
Veterinarians .....	4	10
Dentists .....	9 full time 6 part time	11 76
Dental Hygienists .....	1	68
Health Educators .....	2	10
Cost		
Salaries .....	\$979,400	\$1,810,800
Other .....	187,800	442,800
Total .....	1,167,200	\$2,253,600
Per capita .....	42c	81c

Of the 1,197 units there are 318 of a single county each, 821 multi-county units, thirty-six including parts of more than one county, twenty-two city units including the District of Columbia, and a unit of three cities. Having reached this provisional agreement as to the number and boundaries of desirable and apparently practicable units of local health jurisdiction the following facts were assembled from official documents for each unit and by states.

1. Square mileage.
2. Population and density per square mile.
3. Spendable income per capita and in many instances property valuation or assessment per capita.
4. Number of general hospital beds and beds per 1,000 of population.
5. Number of practicing physicians (pre-Pearl Harbor) and ratio of persons per physician.

Further information was then obtained as to the personnel now employed in each of the proposed units in local health work, and the expenditures for salaries and nonsalary costs, total and per capita for all local health services in each unit area. Finally the committee prepared for each unit a table of the desirable personnel to provide

## PENICILLIN ADMINISTRATION--BAGLEY

a good basic public health service in each suggested unit, including the salary and other costs for the operation of the local health department. In all but a few instances the recommended expense was kept within the one dollar per capita.

A few of the parallel figures for personnel and costs for present and proposed local health services are given here for continental United States, and for Minnesota.

It is suggested that the eighty-seven counties of Minnesota be served by ten multi-county units of populations 71,300 to 591,300, of areas 1,024 to 16,940 square miles, with spendable per capita income of \$382 to \$891, of assessed valuation per capita \$204 to \$1,135, with general hospital bed ratios to a 1,000 population of 2.3 to 6.7, with ratio of population to practicing physicians of 1,698 to 407.

In Minnesota the smallest county has 3,000 population; only five of the counties have more than 50,000 population. There are 2,714 units of local civil government in Minnesota authorized to establish their own health organizations. Of these 1,638 had 1942 health officers mostly on part-time or fee basis and some of them nonmedical. Of the 1,881 townships only 821 had a health officer.

Until there is sound basic local health service for each unit of population and each square mile of area of our nation, neither state health service nor good federal health functions can be well performed. Without local interest in, and responsibility for, local health servants, services and support through tax funds, the best that the medical and associated personnel of health departments are capable of, will not be achieved.

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### ADDITIONAL DATA ON PENICILLIN ADMINISTRATION

WM. R. BAGLEY, M.D.

Duluth, Minnesota

Since writing the article, "Administration of Penicillin by the Knee Joint Method," which appeared in the March number of MINNESOTA MEDICINE, we have had enough corroboratory experience from fellow physicians to warrant the use of the knee injection method. We use normal saline solution in place of sterile water to dissolve the penicillin, every c.c. containing 10,000 units. The high potency, less volume and distention, relatively painless administration, using an ordinary hypodermic needle usually without preliminary novocaine anesthesia, makes this a very practical method of administration, especially outside of the hospital.

The knee is slightly flexed and relaxed. The fingers of the left hand press out from the inner edge of the patella. The center of the lower edge of the shelving projection of the patella is the mark for entrance into the synovial bursa underneath. An inch-long hypodermic needle will pass through 99 per cent of the synovial sacs at this point.

Infections of the extremities which we have treated with hot compresses and sulfa derivatives, we now treat with 10,000 units per c.c. penicillin, injecting 10,000 to 100,000 units distal to and in line with the lymphatics and return circulation. The infected area is subjected

to a concentrated shower of penicillin such as no general body distribution can give, and many times if used before actual necrosis of tissue will prevent abscess formation.

The very light lemon-yellow solution, penicillin in saline solution, 10,000 units per c.c., causes very little tissue irritation. We have used 20,000 units in a finger; 40,000 units in a six-year-old child's forearm; 100,000 units in a leg where the thigh had been lacerated by a boar hog bite. Tetanus serum and knee injections of penicillin were also used in this case.

The determination of the type of infection is not practical in many of these cases but I am very sure the motto, "Use Penicillin First," is safe, and many times the curative results, if large enough doses are used, are almost miraculous. With the purer, very light colored penicillin preparation which a number of our reliable pharmaceutical houses are putting out, the reactions in the tissue are absent or very mild. I believe that when there is any discomfort it is largely due to volume and too rapid infiltration. The concentration of 10,000 units per c.c. of normal saline permits the use of large and effective dosage.

# CLINICAL-PATHOLOGICAL CONFERENCE

## MALIGNANT MENINGOCOCCIC INFECTION

### Waterhouse-Friderichsen Syndrome

#### Report of Two Cases

KANO IKEDA, M.D., and ROBERT ROSENTHAL, M.D.

Saint Paul, Minnesota

DR. ROBERT ROSENTHAL: Last winter, Saint Paul was threatened with an outbreak of malignant meningococcic infection. Two fulminating cases occurring in cousins within twenty-four hours and terminating fatally after a duration of only twenty-two and ten hours, respectively, aroused the community. This type of meningococcic infection is uncommon, and an early diagnosis not always easy. As these two cases showed some very interesting features, and both came to autopsy, it seems worth while to report them. It is also interesting to report that a promptly carried out quarantine and prophylactic treatment with sulfonamides, of practically all children exposed, seemed to have prevented any spread of the disease among about forty contacts belonging to fifteen families, who participated at a birthday party given for Case 1 a few days before.

#### Case Report

DR. G. C. WILCOX: Case 1 was that of a boy, aged six, who became restless and whose temperature suddenly went up to 105.6 per rectum at 1 a.m. The mother gave the child elixir of pyramidon and bathed him, but the temperature remained 105.3. He was seen by the physician at 5:30 a.m. At 8 a.m., the boy was given aspirin and pyramidon. About 12:30 p.m., the child was perspiring freely. His temperature was 101. About this time, purplish spots began to appear at the mouth which spread rapidly over the face and extremities. These spots fused together and formed purpuric patches in areas. He showed no neurologic symptoms. He was admitted to the hospital at 5 p.m.

On physical examination, the boy was fairly well developed and nourished. He did not appear acutely ill but the outstanding feature was the purplish-red color of the skin over the face, arms, and legs. The mucous membrane of the cheeks, gums, and palate was injected and showed purple, blue spots. There was no rigidity of the neck. The heart rate was 90 per minute; there were no murmurs. The lungs were clear to percussion and auscultation. He coughed occasionally. The abdomen was flat. The liver was palpable one finger below the costal margin. The spleen was not palpable. There was no tenderness. The back was negative. The extremities were negative except for the purpuric spots. The reflexes were sluggish. The skin over the face, neck,



Fig. 1. Case 1. Appearance at autopsy. Note dark purpuric areas over the face, somewhat symmetrically distributed; dusky, mottled skin of the chest and shoulder.

arms, and legs was covered with purplish-red patches which were confluent in areas. There were many dark petechiae on the extremities. The back, chest, abdomen, and genitalia were fairly free from these skin eruptions (Fig. 1). The clinical impression at this time was purpura due to some severe toxic condition, probably some infection associated with thrombocytopenia; toxemia due to some drugs; or a beginning meningococcic meningitis. At 10 p.m., the patient became very dyspneic. The lungs were clear, and the heart sounds were faint but clear. The pulse was 160 and the respiration 60. The nail beds were cyanotic. The patient was mentally clear. Oxygen and carbon dioxide were given. The patient expired suddenly at 10:45 p.m., twenty-two hours after the onset of the symptoms. No blood pressure was recorded.

From the Chas. T. Miller Hospital and Children's Hospital, Saint Paul, Minnesota. Kano Ikeda, M.D., Pathologist, and Robert Rosenthal, M.D., Pediatrician.

## CLINICAL-PATHOLOGICAL CONFERENCE

### **Autopsy**

DR. KANO IKEDA: The body was well developed and well nourished. There was no edema or jaundice. The conjunctivae were injected. The nail beds were deeply cyanotic. The entire skin surface of the body was cya-

vealed a few gram-negative diplococci identified as meningococci. The blood culture was negative.

Microscopically, too, the most striking picture was generalized vascular engorgement of all the organs, notably the skin (Fig. 3), the lungs, the larynx, the brain,

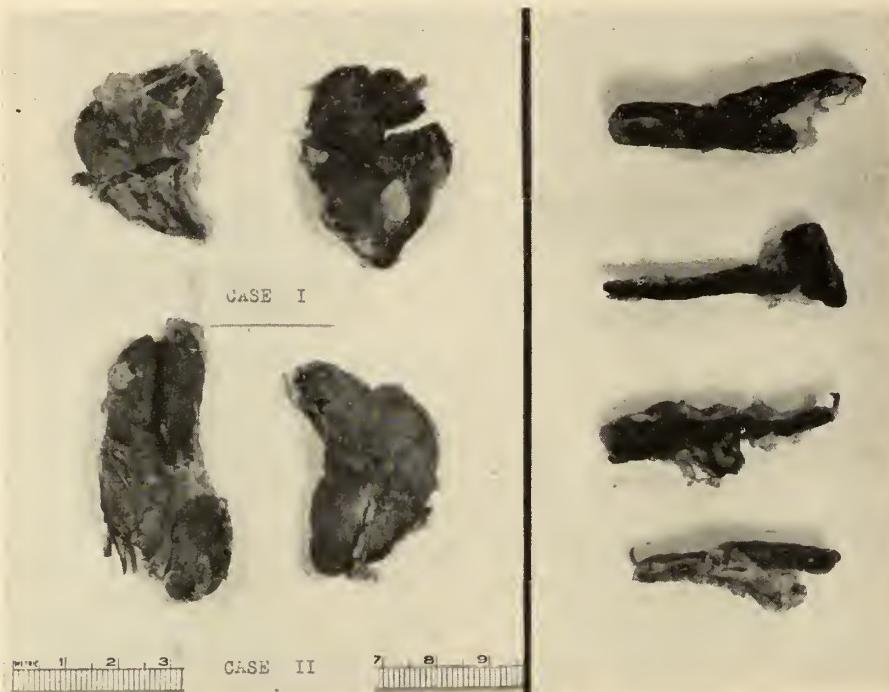


Fig. 2. Adrenal glands, Case 1 and Case 2. Note diffuse, massive hemorrhages throughout the organs, except a middle portion of the left adrenal of Case 2.

notic red in color with spreading areas of deeper purplish discoloration scattered over both upper and lower extremities and over the face and to a lesser extent over the trunk (Fig. 1). The distribution of the purpuric areas was somewhat symmetrical on both sides of the body.

The purpuric appearance of the skin immediately recalled to me the cases of malignant, purpuric (black) smallpox I saw and autopsied back in 1924-25 at Minneapolis General Hospital. I also thought of some other fulminating toxic or infectious disease. The gross autopsy findings were not remarkable except the adrenal glands which were both diffusely hemorrhagic (Fig. 2). Other changes were hemorrhagic spots on the serosal linings of the pleurae and peritoneum and in the lungs, cloudiness of all the visceral organs, and a congenital cystic pancreas which was incidental. The larynx was swollen and inflamed. The brain was swollen and enlarged, and the capillaries in the white matter were prominent. No exudate was recognized on the meninges. The nasal accessory sinuses and the mastoids were negative. The spinal fluid was very slightly turbid and its cell count was 120 per cu. mm. with predominance of polymorphonuclears. The smear of the sediment re-

and the kidneys. Both adrenal glands showed diffuse extravasation throughout the cortex and medulla to the extent that all the parenchymal cells were buried in the flood of blood (Fig. 4). The skin showed marked dilatation and engorgement of all the capillaries and areas of extravasation throughout the derma. The mucosa of the larynx showed a similar picture (Fig. 5). The tracheobronchial lymph nodes showed a marked degree of edema and widening of the sinusoids which contained many wandering neutrophiles, monocytes, and eosinophiles. The leptomeninges was edematous and congested and infiltrated by a few polymorphs, which also crowded along the perivascular spaces of the brain, indicating a beginning of a meningitis. Another striking thing was the appearance of the myocardium which failed to take even staining due undoubtedly to degenerative changes of the cells. One focal collection of polymorphs was recognized which might lead one to suspect a focal myocarditis (Fig. 6).

Of interest was the spinal fluid chlorides which was 590 mgm. against the normal of 750 mgm. The pericardial fluid chlorides was 466 mgm. which was also somewhat lower than the normal value. These lowered values of chlorides may be taken as an index of adrenal insufficiency.

**Case Report**

**DR. ROSENTHAL:** The second case was that of a boy, two years of age, who was admitted to the hospital at 8:50 a.m., even as the autopsy was being performed on

became cloudy. The temperature rose to 105.5. Seven and a half hours after the onset of the illness, purpuric spots began to appear on the trunk. On admission to the hospital, the patient was purpuric over the entire body. He was cyanotic, dyspneic, and comatose. The

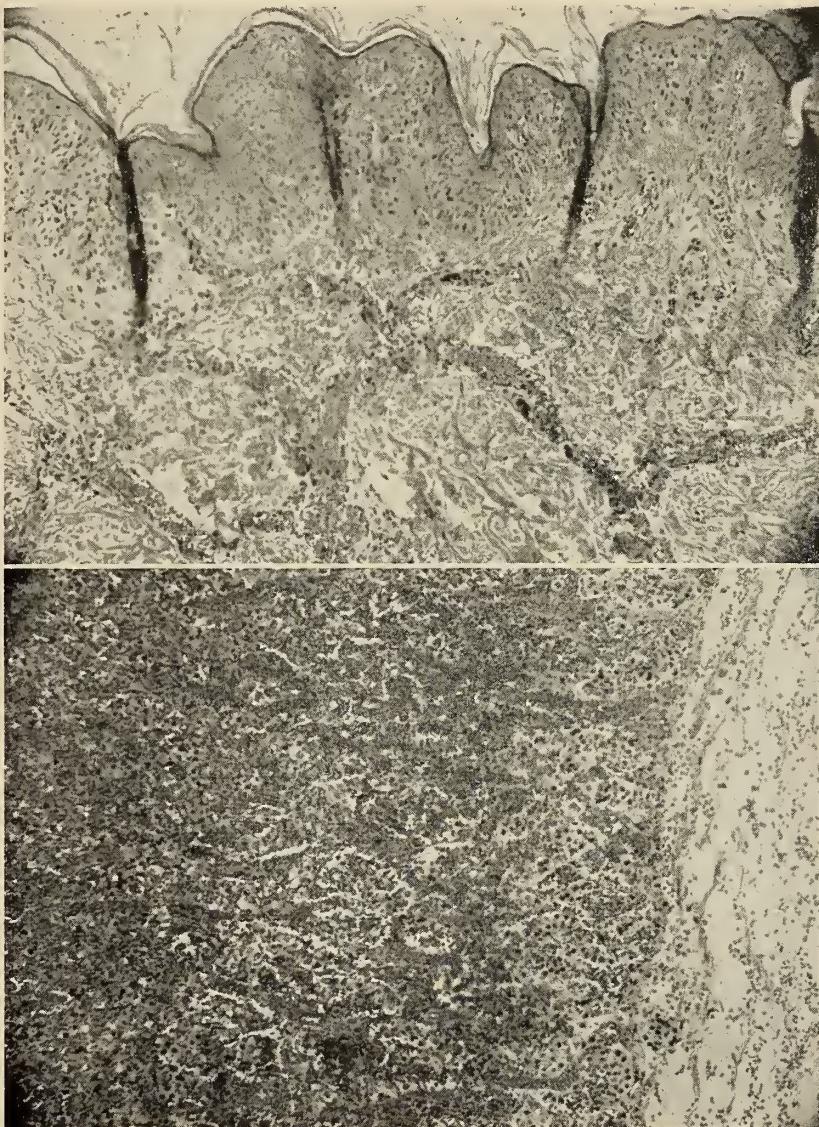


Fig. 3. (above) Microscopic view of the skin, showing engorged, anastomosing capillaries of the derma.

Fig. 4. (below) Microscopic view of the adrenal glands showing a diffuse extravasation and few crowded cords of cortical cells.

the first case. He became acutely ill soon after midnight. He vomited several times and his temperature rose to 104. He was restless in spite of sedatives. There was a marked tachycardia, and the respirations became quite rapid. He became critically ill. The respirations, at times, took on a gasping character; the pulse varied between tachycardia and bradycardia and at times was barely perceptible. The pupils reacted poorly at times. There was occasional slight jerking, and the sensorium

stools were loose and mucus streaked. A spinal puncture showed considerable pressure but a clear fluid which contained two cells. He was given 35 c.c. of 0.5 per cent sodium sulfathiazole solution intravenously, calcium gluconate intramuscularly, and sodium phenobarbital subcutaneously. The cyanosis became more intense and the number of purpuric spots increased. He expired under the picture of circulatory failure ten hours after the onset of the illness.

**Autopsy**

DR. IKEDA: The entire skin surface showed light purplish-red discolorations with small purpuric spots scattered on the trunk and over the extremities. The visceral organs were cloudy but not remarkable. The

Microscopically, there was no evidence of meningitis. The adrenals were diffusely hemorrhagic. The skin showed engorgement of all the capillaries of the derma. Other visceral organs were congested as in Case 1, but to a lesser degree.

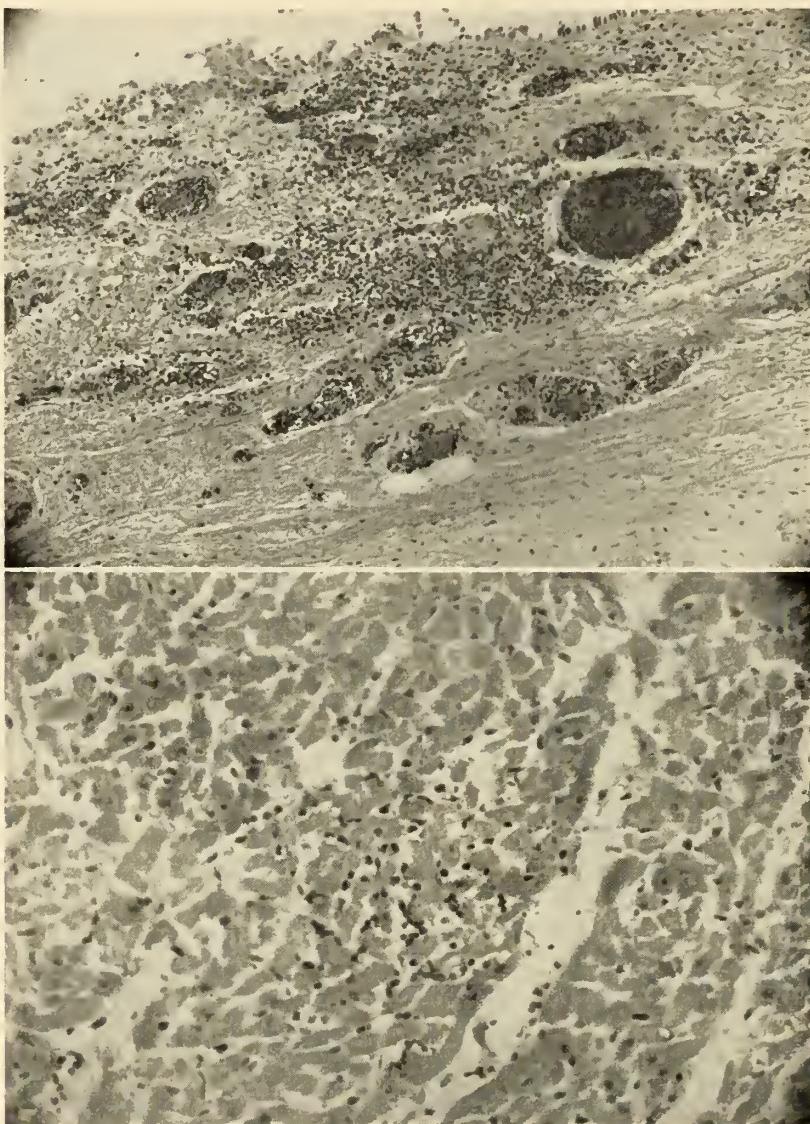


Fig. 5. (above) The mucosa of the larynx showing engorgement of the capillaries and extravasation throughout the corium.

Fig. 6. (below) The myocardium showing uneven staining due to degeneration and an area of focal collection of leukocytes, indicating a focal myocarditis.

right adrenal gland was completely hemorrhagic while 75 per cent of the left was hemorrhagic (Fig. 2). The larynx was edematous and congested. The brain was edematous and congested but showed no gross evidence of meningitis. The nasal accessory sinuses were clear, as were the mastoids. The spinal fluid was clear and showed no organism on direct smear but staphylococci on culture, which was interpreted as due to contamination. The blood culture grew meningococci.

To recapitulate the findings in these two cases: Both belonged to that rare group of fulminant meningococcic septicemia in which the purpuric eruptions of the skin and the hemorrhagic adrenals were the most prominent features. The presence of the latter with tendency to circulatory collapse has been known as the Waterhouse-Friderichsen syndrome. In the first case, the spinal fluid contained meningococci and the meninges showed early inflammatory changes, but the blood culture was nega-

tive, while in the second case, which was of only ten hours' duration, only the blood culture was positive for the causative organism. The meninges had apparently been yet uninvaded. A positive culture of the spinal fluid in Case 2 for staphylococci was disregarded as due to contamination. An attempt to demonstrate the organisms in the hemorrhagic areas of the skin was made. A few coccus-like bodies were seen which might be identified as meningococci. The exact route of infection was not determined in either case, though both showed the evidence of acute laryngitis.

### Discussion

**DR. ROSENTHAL:** Case 2 definitely belongs to the so-called fulminating type while Case 1 may belong to the same type or to the septicemic type. In both groups, the meningitic symptoms may be very slight or almost absent, and the same is true of the spinal fluid findings. The onset is sudden with headaches and delirium soon followed by signs of circulatory collapse and coma. Petechiae and purpura are frequently a prominent manifestation, especially in the septicemic type. The temperature may show wide variations. The duration is very short, usually reported to be twelve to twenty-four hours. In certain epidemics, the incidence of fulminating cases is particularly high. The Waterhouse-Friderichsen syndrome usually accompanies these malignant cases, with massive hemorrhage into the suprarenal glands; but it is not pathognomonic for meningococcemia as it has been described in other profound infections.

**DR. IKEDA:** A clinical syndrome exemplified in these two cases: namely, a sudden onset of symptoms of a severe infection accompanied by cyanosis, purpuric eruptions, circulatory collapse, stupor, and early death, in which the most striking finding at autopsy is the bilateral massive adrenal hemorrhage, aptly called "adrenal apoplexy," has since 1918 been known as the Waterhouse-Friderichsen syndrome. This comparatively rare clinical syndrome is usually associated with acute fulminating meningococcic infection and has, sometimes, been used synonymously with it. However, as Karsner stated in his textbook<sup>1</sup>, "the condition is apparently due to fulminant bacterial infections; hemolytic streptococci, pneumococci, influenza bacilli, meningococci, and others have been recovered from different cases." I may say here that in spite of this statement of Karsner's, which is generally accepted, it is of interest to recall that in the several autopsies I performed back in 1925 on individuals who died of malignant smallpox, known as purpuric or black smallpox, which behaved exactly like these two cases and in which the hemolytic streptococcic septicemia was the usual co-infection, in no instance did I find hemorrhagic adrenals. According to Martland<sup>2</sup>, only 107 cases of this syndrome had been recorded in the literature up to 1943, and about 90 per cent of these had been in infants and children under nine years of age. Yet he states that he and his associates, as medical examiners, had for many years recognized this disease complex as a cause of sudden, unexplained deaths in adults as well as in infants and leaves the impression that the condition is not as uncommon as generally

thought to be. He found nineteen cases in over 10,000 autopsies during the last thirteen years, ten in infants and children, the majority under five years of age, and nine in adults. These were all cases of fulminating meningococcic septicemia. He seems to disagree with Karsner and states that he had "never found bilateral massive hemorrhages in the adrenal glands in any of these infections (streptococcic, staphylococcic, pneumococcic and other bacterial infections) or in any condition other than fulminating meningococcemia." Martland is so positive of his conviction in this regard that, when he observes these gross changes at autopsy in cases of sudden and suspicious death, without evidence of trauma or vitamin deficiency, he would毫不犹豫地 make positive diagnoses of "fulminating meningococcic septicemia sine meningitis" without waiting for bacteriologic confirmation. In his opinion, the hemorrhages seen in the adrenal glands in other severe infections are not massive and bilateral, but focal and often unilateral. I am personally inclined to accept his conclusions, having myself never seen the bilateral adrenal hemorrhages of such massive proportions in a large number of septic cases autopsied, including the cases of fulminating purpuric smallpox already cited. Lindsay, Rice, Sellinger and Rubin<sup>3</sup> reported that two out of the seven cases showing the Waterhouse-Friderichsen syndrome with bilateral adrenal hemorrhages had an influenzal meningitis. Kunstadter<sup>4</sup> estimated about 65 to 70 per cent of the reported cases are due to meningococcic infection. That one must be cautious in accepting certain bacteriological reports where chances of contamination may not be entirely eliminated is illustrated in Case 2 of ours who was exposed to Case 1, and in whom meningococci were isolated from the blood, and whose spinal fluid was perfectly normal, yet, was reported to have given a positive growth for staphylococci. While I am positive that in this particular case the staphylococcus must have been a contaminant, one must also bear in mind the possibility of terminal invasion by a second pathogenic organism as in the cases of the purpuric smallpox in which hemolytic streptococci were invariably isolated from the blood as secondary invaders. Therefore, it may be justifiable to state that at least some cases of the Waterhouse-Friderichsen syndrome, in which the causative agents were reported to be other pathogenic bacteria than meningococci, may have, in reality, been a case of primary meningococcic infection in which a secondary invader has eclipsed the original offender—the meningococcus. Many observers are of the opinion that the massive adrenal hemorrhage brings about a circulatory collapse which leads to an early death of the patient. However, there are others<sup>5</sup> who believe that the fatal outcome is directly the result of the sepsis and toxemia rather than the hypoadrenalinism though the latter may be the most important deciding factor, and, for that reason, should be vigorously combatted by adequate adrenal cortical replacement therapy. On the other hand, it must be remembered also that sepsis alone may not cause a fatal or even a serious clinical picture, as has been well demonstrated by Potter, Reid and Bronstein<sup>6</sup> who reported eleven cases of meningococcemia with the characteristic skin eruption, and without men-

## CLINICAL-PATHOLOGICAL CONFERENCE

ingitis, all of whom recovered. The question of the exact role which the massive hemorrhage in the adrenal glands plays in the syndrome still remains to be explored and settled.

As to the treatment, aside from the usual supportive therapy, sulfadiazine in adequate dosage seems to be almost specific and of first importance. That penicillin may prove equally or even more satisfactory to combat the sepsis is confidently expected. Of equal importance would be to correct the possible associated adrenal insufficiency by administration of adrenal cortical extract, sodium chloride, et cetera.

DR. R. M. WATSON: What is the mechanism which causes the massive hemorrhages in the adrenal glands?

DR. IKEDA: The most plausible explanation given seems to be that there is a direct toxic effect of the bacteria (meningococci) on capillary endothelium, causing the increased permeability and even the rupture of the walls with resulting extravasation. The adrenal gland, like the skin, has extensive, delicate capillary beds which are in intimate contact with the parenchymal cells, which accounts for a greater degree of involvement. Bacterial emboli are also suspected to play a part in the process.

DR. J. P. DAHLSTET: Will you enumerate some of the more important conditions to be considered in the differential diagnosis?

DR. IKEDA: From the standpoint of a clinical pathologist, and in the face of an evident fulminating infection, I would think of purpura fulminans of scarlet fever, measles, smallpox, diphtheria, and other septicemia, Rocky Mountain spotted fever and typhus, acute leukemia or other hemorrhagic diatheses. Thrombocytopenic purpura, vitamin deficiency, drug poisoning, com-

plicated by infection may be considered. However, the clinical picture here is so striking and dramatic that once seen, the clinician is not likely to forget the experience. It is regrettable that because of the rapidly fatal course, it has not been possible to make any extensive laboratory studies in these cases which might enable us to furnish the characteristic laboratory findings in the Waterhouse-Friderichsen syndrome.

In conclusion, may I emphasize a few pertinent observations which make reporting of these two cases worthwhile. First of all, none of the other forty odd contacts, all younger children, developed the infection. This, I believe, was largely due to the prompt quarantine and administration of sulfadiazine to those exposed as a prophylactic measure. Secondly, these two cases illustrate the earlier phases of meningococcic infection which should no longer be considered a mere meningitis but rather as a septicemia with ultimate localization in the meninges, which begins as a pure bacteremia without the meningeal involvement as in Case 2. The virulence of the invading organism and the resistance of the victim seem to determine the subsequent clinical picture. Thirdly, an early administration of sulfonamide or penicillin in large doses in all cases manifesting a similar clinical syndrome seems justified, according to a number of reported recoveries.

### Bibliography

1. Karsner, H. T.: *Human Pathology*. p. 704. Philadelphia: J. B. Lippincott Company, 1942.
2. Martland, Harrison S.: Fulminating meningococcic infection with bilateral massive adrenal hemorrhage. *Arch. Path.*, 37:147, 1944.
3. Lindsay, J. W., Rice, E. C., Sellinger, M. A., and Rubin, L.: The Waterhouse-Friderichsen syndrome. *Am. J. M. Sci.*, 201:263, 1941.
4. Kunstadter, Ralph H.: The Waterhouse-Friderichsen syndrome. *Arch. Pediat.*, 56:489, 1939.
5. Cosgriff, Stuart W.: The Waterhouse-Friderichsen syndrome: Observations on associated adrenal insufficiency and report of four cases. *Ann. Int. Med.*, 21:187, 1944.
6. Potter, Harold W., Reid, Roger D., and Bronstein, Lewis H.: Meningococcemia without meningitis. *Ann. Int. Med.*, 21:200, 1944.

### THE TUBERCULOUS PATIENT

The private physician determines the presence or absence of tuberculosis. He has the responsibility, not only of making a diagnosis and advising treatment when indicated, but also of convincing the patient to accept his advice. The physician should be meticulously careful that in an effort to spare the feelings of the patient he does not minimize the importance of the disease, both

to the individual and to his family and other associates. The patient should realize that he has tuberculosis and not a "shadow" or "spot" on his x-ray film, that continued observation is absolutely essential, and that if treatment is indicated it is imperative that he accept it.—ROBERTS DAVIES, M.D., Nopeming Sanatorium, Nopeming, Minnesota.

# HISTORY OF MEDICINE IN MINNESOTA

## HISTORY OF MEDICINE IN GOODHUE COUNTY

### Biographical Dictionary

(Continued from April issue)

— **Brooks** practiced in Red Wing previous to 1857. His office was taken over when he left by Dr. Charles H. Connelly.

**Otis J. Brown** graduated from the Western Reserve University in 1872 and came to Red Wing in 1885. He was president of the Red Wing Literary Society and was interested in debating. He served as county physician and, in 1898, he left for Crookston. Later he practiced in St. Cloud.

**William Brown** enlisted from Goodhue County as a surgeon in the Civil War.

**H. L. Brynildsen** was born in Norway in 1850. He practiced medicine at Vasa, Goodhue County, from about 1877 on. He ran a drug store, also, and served as postmaster at various times. He died June 29, 1908.

— **Bude** is listed at Zumbrota in 1895.

**C. W. Calenvan** is listed as practicing in Kenyon in 1890 (Polk's Directory).

— **Carver** is reported as an early practitioner at Pine Island.

**Ambrose L. Clum** first made his appearance in Goodhue County about 1880 when he was lecturing and selling Clum's liver cathartic, a patent medicine which he manufactured himself. He tried his hand at many other things in his notorious career, among which were law, medicine, architecture and politics. In law, he failed to pass the bar examination but used his self-gained knowledge to start lawsuits against anyone, for anything, if he thought he could gain thereby. In architecture, he drew plans for several public buildings; but apparently secured no contracts. In politics, he was continually announcing himself as candidate for various offices, even for the state senate, though he was never elected. In medicine, he started by lecturing on physiology and anatomy, selling patent medicines, and running an establishment for electric, "pharmatic" and Turkish baths. In 1885 he graduated from an electric college for physicians in Indianapolis and also secured a diploma in obstetrics and "opathology." Returning to Red Wing, he started a sanitarium and added the initials, "A.M., M.D., LL.D." to his name. He spent brief periods in Minneapolis, Montana and Chicago. Finally, in 1897, he established himself in Minneapolis as an "Australian specialist of wide experience, deep learning and high renown." Under the title, "Surgery is a Mockery to Science," he lectured of the wonderful remedies he had learned from a Hindoo physician and the many and marvelous cures he had performed in this and foreign lands. We leave him in 1899 as "the famous German Specialist."

**H. L. Coan** was in Goodhue County in 1876.

**Alva T. Conley** was born in New York in 1847. He graduated from the Iowa State University in 1874 and two years later came to Cannon Falls. He was president of the Goodhue County Medical Society and served as Cannon Falls health officer and as county physician. He was a prohibition-

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ist and believed in state control of liquor. He had a wide reputation both as a man and as a physician.

**Hiram E. Conley** graduated from the Iowa State University in 1884 and established himself as a physician in 1886 in Cannon Falls.

**Charles H. Connelly** came to Red Wing in 1857 or a little earlier and practiced there until his death, in October, 1861.

**W. L. Cradock** was a homeopath who practiced in Pine Island in the eighties and served as county physician in 1889.

**C. W. Crary** graduated from the Jefferson Medical College in 1871. About 1875 he went to Lake City and, later, came to Goodhue County. In 1885 he moved to Wisconsin and thence to Chicago.

**J. E. Crewe** graduated from the University of Minnesota Medical School in 1896 and established himself in Zumbrota in 1897. In 1899 he was appointed examining surgeon for the Zumbrota militia. In 1902 he moved to Rochester. (See Olmsted, Houston, Fillmore, Dodge County Histories.)

**C. E. Daniels** practiced in Goodhue County toward the end of the seventies.

**Brainard Dearborn** graduated from Bowdoin in 1867. In 1890 he opened an office in Red Wing. He studied in Europe in 1891 and six years later located in Wakefield, Nebraska.

**Charles Delaine** is first mentioned in connection with a malpractice suit in 1878 in Red Wing. He died about 1880 of alcoholism.

**L. W. Denton** came to Pine Island in June, 1878.

**F. W. Dimmitt** was born in Cambridge, Illinois, in 1859. He attended the University of Missouri and graduated with high honors from the Rush Medical College in 1881. He practiced in Illinois for twelve years and came to Red Wing in 1893, having spent the previous year in a private hospital. He served on the Red Wing Board of Health and as president of the Goodhue County Medical Society. Dr. Dimmitt left Red Wing for Wisconsin after 1900 and later moved to Texas.

**A. C. Dockstader** practiced in Red Wing in 1884. (See Dakota County History.)

**John Emmet** was born in Norway, graduated from Iowa State University and came to Red Wing in 1883.

— **Freeman** lived in Pine Island but moved to Red Wing about 1874.

**Charles M. Frye** practiced in Zumbrota. He graduated from Ann Arbor University in 1883.

**R. Frettheim** graduated from the King Frederick University, Norway, in 1882 and came to Cannon Falls about 1889 or 1890. He died in 1899 of hemorrhage of the lungs, having had several previous attacks. At the time of his death he was about forty-eight years old and known as an eccentric. He was unmarried and had few friends, but those he had were warmly attached to him.

**Lewis H. Garrard** was born in Cincinnati in 1829. He first visited Minnesota in 1854. Later, after a two years' tour of Europe, he established himself on a 5,000-acre farm at Frontenac where he introduced and bred Devon cattle and Southern sheep. He was one of the first in Minnesota to cultivate orchard grass and he was noted for the fine fruit he raised. In 1857 he was elected a county supervisor. In 1859 he was elected to the state legislature. During the war he enlisted in the Seventh Minnesota regiment and he was active in local Republican politics. In 1870 he moved to Lake City and was elected mayor in 1876. Later he was again elected to the legislature.

He died at the age of fifty-eight in New York of a paralysis which followed a short illness.

**J. A. Gates** practiced at Kenyon, Goodhue County. In 1905, as a member of the state legislature, he was instrumental in blocking measures prepared in the interests of quacks. It was due largely to his efforts, also, that Goodhue County undertook establishment of the tuberculosis sanitarium which later became Mineral Springs Sanitarium. He served as captain in the United States Army Medical Corps in World War I.

**C. P. Gibson** graduated from the Chicago Medical College in 1873 and located in Goodhue about the beginning of the eighties.

— Glidden is listed at Pine Island in 1882.

**Ole Gloppestad** received his medical degree in 1887 from Rush Medical College and lived at Skyberg, Goodhue County.

— Gould is listed at Zumbrota in 1876.

**D. W. Graves** practiced at Kenyon from 1870 to 1880.

**William Greaves** graduated from the University of Michigan in 1870 and located in Cannon Falls the next year. He later ran a drug store in Kenyon.

**G. W. Green** settled in Goodhue County in 1873. (See Wabasha County History.)

**Just Christian Gronvold** lived and practiced medicine at his home in Wanagering near Norway, Goodhue County, for many years and was known as one of the outstanding men in his profession. He was born at Fron, Norway, in 1833, and graduated from the University of Christiania in 1851. The next year, at the age of nineteen, he passed the "examen philosophicum" and began the study of mathematics and natural sciences. He spent several years as a teacher of mathematics at Sylom's Polytechnical school in Christiania and also spent several years surveying and drawing maps. He served as an assistant engineer in a railroad survey during these years and he was a reserve lieutenant in the Norwegian army. He came to the United States in 1865, intending to enter the army here. Instead he attended the Humboldt Medical College in St. Louis, graduated with high honors the following year, and came to settle in Minnesota (1867). He was a member of the Goodhue County Medical Society (1870) and the State Medical Association (1871). Beginning in 1876 he served for twelve years on the State Board of Health. He also served as county physician. He was one of the foremost authorities on leprosy in the country and reported the first known case of Elephantiasis Graecorum recorded in Minnesota. He was the author of "Leprosy in Minnesota" (a report first published in *Public Health*, Red Wing, Minnesota, in 1886-7, II 89-91). He was interested in Scandinavian folk songs and melodies and was one of the organizers of the Norway Singing Society. He died in 1895 of the combined effects of pneumonia and heart disease. Goodhue County lost a public-spirited citizen of intelligence, independence and indefatigable energy. His many friends shared in expressing the esteem they held for him by the erection of a memorial over his grave. His death was followed, two months later, by the death of his wife, whom he had married in 1874. They were survived by seven children.

**K. E. Gryttenholm** began the practice of medicine in Zumbrota about 1894. In 1897 he attended the International Medical Congress in Russia.

**Orrin I. Hall**, a brother of O. H. Hall, was born in Wales, N. Y., in 1843. He graduated from the University of Buffalo in 1873 and opened his practice

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in Zumbrota in 1874. He served as county physician. His death occurred in June, 1908.

**Oscar H. Hall** practiced medicine in Zumbrota, Goodhue County, from 1868, when he graduated from the University of Buffalo Medical School, until 1901, when he moved to Minneapolis. He was a charter member of the Goodhue County Medical Society, a member of the Minnesota Homeopathic Association, and he became a member of the State Medical Association in 1871. He served as county physician and for a while in the seventies he ran a drug store. Toward the end of the nineties he moved to St. Paul. In 1899 he was elected president of the St. Paul Homeopathic Society of Medicine and Surgery. He was born in New York state in 1842 and died in Minneapolis in 1913.

**T. E. Hall** graduated from Rush Medical College in 1875 and practiced at Frontenac.

**W. N. Hambliton**, a homeopath, came to Red Wing in 1878 from Chicago.

**J. W. Hancock** first practiced in Goodhue County in the seventies. In 1871 he became a member of the State Medical Association. Later he moved to Ellsworth, Wisconsin.

**Ed. S. Hart** shared an office with Bruno Jaehnig in Red Wing in 1883 and was in that year elected to the Goodhue County Medical Society. The next year he left to take the post of surgeon at the Standing Rock Agency in Dakota. Thence he went to Fort Yates, Dakota, and to Minneapolis.

**K. A. Haslerud** graduated from Christiania University, Norway, and spent part of 1883 in Red Wing.

**A. B. Hawley** practiced in Red Wing. He was born in New York state in 1833. He studied medicine with his uncle, Dr. Joel E. Hawley, of Ithaca, New York, graduated from Geneva Medical College in 1854 and spent two years abroad, studying in Edinburgh, Paris, London and Dublin. The first issue of the *Red Wing Republican*, September, 1857, contains his business card. After the Civil War he was a partner in the Clark and Hawley Drug Store, one of the first of the city, and later he took over entire charge of the store. He was a charter member of the Red Wing Christ Church (1869), a charter member of the Goodhue County Medical Society (1869) and was active in the reorganization of the Minnesota State Medical Association which took place the same year. He was an able physician, a good citizen, popular and genial, and, in politics, Republican. He was interested in geology and had built up a collection of fossils. He died in September, 1878.

**A. W. Hewitt** was born in New York in 1826 and entered the practice of medicine in Bradford, New York, after studying under several practitioners there. Later he moved to Ripon, Wisconsin, and remained there until 1867, when he went to Kenyon. He ceased to devote all of his time to medicine after the first few years in Kenyon and died there in the early '90's.

**Charles N. Hewitt** was one of the outstanding physicians of Minnesota and was known throughout the country for his work in public health. William Watts Folwell, who knew him at college and who served in the same regiment with him during the Civil War, speaks highly of him in his *History of Minnesota*. Under the chapter headed "A Minnesota Doctor," Dr. Hewitt is also included in C. L. Slattery's *Certain American Faces*. Charles Hewitt was born in 1835 and graduated from the Albany Medical College in 1857.

After the conclusion of the Civil War, in which he served with the rank of major, he came to Red Wing (1867) where his professional card announced him as an examining physician for pensions. He was one of the charter members of the Goodhue County Medical Society and its president in 1872. He was also a charter member of the Minnesota State Medical Association when it was reorganized (1869), and served as its president in 1882. Beginning in 1873 he lectured to senior classes at the University of Minnesota on hygiene. Later he lectured in the medical school; and finally, in 1891, he took charge of the department of bacteriology. He was much interested in the welfare of his own town and he was one of the founders of the Red Wing Natural History Society (1884). He was elected a member of the Minnesota Commandery of the Military Order of the Loyal Legion.

In 1872 Dr. Hewitt became permanent secretary of the Minnesota State Board of Health. As such, he organized local health boards throughout the state, supervised the inspection of schools, public buildings, ventilation systems and sanitation, and used his influence in securing safe water systems for various towns. He did much lecturing and writing, urging that the newspapers be used for health information. He was especially influential in encouraging vaccination for smallpox in the state and in 1891 he established, on a farm near Red Wing, the first vaccine station in Minnesota. He was one of the promoters and contributors to *Public Health*, a magazine published by the State Board of Health. He held his position as secretary until 1897. At that time, Governor Clough failed to reappoint him and he was succeeded by Dr. H. M. Bracken of Minneapolis. Reasons given at the time for the governor's action were that the board had been enlarged in order to include men from the medical faculty of the University of Minnesota and that Hewitt, being an independent professor at the university, and something of an autocrat, had aroused their antagonism. They thought a younger man would be of more service.

Charles Hewitt was an honorary member of the New York State Medical Association and in 1888 he became the president of the American Public Health Association. In 1890 he went to France where he spent about a year studying at the Pasteur Institute. He did research work on diphtheria and rabies, there, and visited the famous Grannevillier sewage plant. He went to Munich and then to London where he had been invited to deliver an address before the International Medical Congress. He was made a member of the Hygiene Society of France and, in 1895, received the honorary degree of LL.D. from Geneva College, New York, for his public health work. He died in 1910 and his extensive library was presented by Mrs. Hewitt to the Goodhue County Medical Society. Later the library was put under the care of Dr. W. J. Mayo, who had long been a close friend of Dr. Hewitt. It is now maintained as the Charles N. Hewitt Library in the Mayo Clinic at Rochester.

**A. E. Higbee**, a homeopathic physician, opened his practice in Red Wing and Minnesota in May, 1870. Five years later he moved to Saint Paul to form again a joint practice with his brother, C. G. Higbee.

**C. G. Higbee** was born in New York in 1835. He had a successful practice as the first homeopathic physician in Red Wing, having settled there about the year 1860. He was a captain in the union army during the war and in 1871 moved to Saint Paul.

**Charles Hill** was born in Gallatin County, Illinois, in 1826, went to Kendall College in 1850 and studied medicine at Ann Arbor, Michigan, and

at Nashville, Tennessee, in 1854, 1855 and 1856. After one year's hospital experience in Chicago he graduated from Rush Medical College in 1857, and settled in that year in Roscoe, Goodhue County. In 1859 he moved to Pine Island and is credited with being the first physician to establish himself in practice there. He was elected president of the town council when the village was incorporated in 1878. He was elected to the State Senate in 1869 and became president of the Goodhue County Medical Society at its reorganization in 1902. He was one of the most beloved of the early pioneers and was a familiar figure about the town in his high silk hat and cutaway coat until his death in 1914. It is interesting to note that his son, Frank D. Hill, was a linguist of ability and served as consul to cities in Paraguay, Uruguay, Venezuela, Brazil, The Netherlands, Spain, Russia and Germany. At the time of his accidental death in 1912, he was consul to Frankfort, Germany.

**Fred Hoff** settled in Goodhue County in 1878.

**Seth E. Howard** came to Goodhue in 1893 from Rochester and stayed for two years before moving to Minneapolis.

**F. F. Hoyt** first came to Red Wing in 1856. He became a partner of W. W. Sweney and was esteemed highly in his profession. He took an important part in civic life, being a member of the first city council of Red Wing. He was a charter member of the Goodhue County Medical Society and became a member of the Minnesota State Medical Association in 1871. He died in May, 1880, at the asylum for the insane in St. Peter, Minn.

**Christian Hveem** was born in 1835 in Norway. He received his medical degree from an eclectic school in 1878 and practiced in Hader, Goodhue County.

**J. L. Irwin** settled in Goodhue County in 1880.

**Bruno Jaehnig**, one of the important physicians of Red Wing, was born in Saxony in 1841. He graduated from the University of Michigan in 1865 and came to Red Wing in 1869. In 1870 he became affiliated with the Goodhue County Medical Society, serving as its president in 1883. He served as a county physician and as city health officer for many years. He was the first superintendent of the county hospital and was physician to the State Training School. Toward the end of the seventies he was a partner in the Jaehnig and Teele Drug Store and was also an agent for the Mathushek pianos. For many years he was director of the Minnesota Scandinavian Relief Association. He was an active member of the local school board and maintained a life-long interest in music and ornithology. His death occurred in 1912.

**Martin Johnson** graduated from the Buffalo Medical College and located in Red Wing in 1890.

**A. H. Jones** started the City Drug and Book Store in Red Wing in 1861 and apparently practiced as a physician at the same time. He was a charter member of the Goodhue County Medical Society and its first treasurer. He served on the local school board and in 1884 was, for a while, a partner to Dr. Newhall.

**Alva W. Jones** was born in Chesterfield, Ohio, in 1863. He came to Red Wing in the '80's and there taught English and Mathematics at the Hauge Seminary for a short time. Later he attended the University of Minnesota for three years and eventually graduated in medicine from Georgetown University in Washington, D. C., in 1891. After two years of practice in Washington, Dr. Jones returned to Red Wing in 1894 and he has remained in active practice there ever since. In the course of his career he has served as health officer and president

of the Board of Health, as president of the Board of Education and of the Goodhue County Medical Society. In early years he was a member of the United States Pension Board and he was, for twelve years, physician to the State Training School at Red Wing. Dr. Jones is a man of wide interests and attainments and a poet of marked ability.

**Philo E. Jones**, uncle of Alva W. Jones, attended the University of Michigan and studied medicine at the Medical College of Ohio (graduating in 1870), the Bellevue Medical Hospital, New York, and the Jefferson Medical College in Philadelphia. Before coming to Red Wing in 1878 or 1879 he had practiced for eleven years in Ohio. In 1884 he formed a partnership with Dr. Newhall and built and maintained a large practice for many years. He was a man of culture and industry, with business as well as professional ability. He moved to Salt Lake City in 1894 and later to Portland, Oregon. He died in Portland leaving two sons who are both well-known physicians, Noble W. Jones of Portland, and Edward W. Jones of Seattle.

**N. Juell** came to Red Wing in 1893 following a period of study in Germany. Previously he had practiced in Wisconsin and in other parts of Minnesota. He served on the pension board and in 1897 removed to Faribault to practice and to conduct a drug store.

**F. Keller** practiced in Red Wing 1874 to 1875. (See the Olmsted, Houston, Fillmore, Dodge County Histories).

**John Kelly**, one of the first physicians in Goodhue County, was born in New York in 1801. He later moved to Pennsylvania, thence to Ohio and to Michigan where he farmed until, in 1845, he began to practice medicine. In 1849 he went to California intending to give up his practice because of his health; but he returned to Michigan in a few years, and in 1853 he came to live on a farm in Florence, Goodhue County, Minnesota. He was a member of the Lake Pepin Valley Old Settlers Association. Apparently, he did not practice medicine after coming to Minnesota. He died at Central Point at the age of ninety-one.

**John W. Koch**, a graduate of the medical school of Frankfort, Germany, and also of the Hahnemann Medical College of Chicago (1868), located in Red Wing in 1868.

**Hans J. E. Koren** was a graduate of the King Frederick University, Norway (1869). He located in Red Wing about 1882 and was a member of the Goodhue County Medical Society (1883).

**J. M. Knox**, an oculist, came to Red Wing to practice in 1867.

**B. F. La Rue** graduated from Rush Medical College in 1870 and came to Red Wing the next year.

**Herbert W. Lane** is listed as practicing in Red Wing in 1890. (Polk's directory). He moved to Ellsworth, Wisconsin.

**F. Laus** took his medical degree at the Chicago Medical College in 1874 and settled in Goodhue County.

*(To be continued in the June issue.)*

# President's Letter

## COGITATIONS

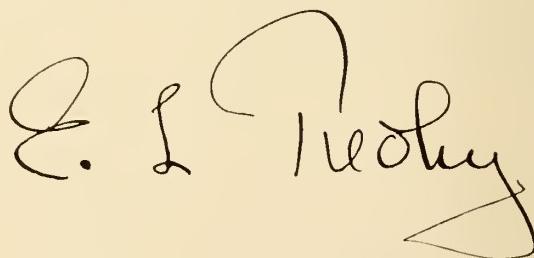
The courtesy was afforded me recently to visit one of the largest Army hospitals (the Percy Jones at Battle Creek, Michigan) and the medical division of the Great Lakes naval training station near Chicago. It is scarcely possible to sketch the immensity of medical military problems posed by this war. Both of these institutions show clearly the adaptability and motility of our profession. What laymen generally fail to understand is the price our profession pays to make possible "The saving of over 95 per cent of those wounded and brought alive to dressing stations." That dramatic, immediate life saving captures the imagination. It is not only newsworthy, but screenworthy. What is missed is the tedious, grinding detail of the reconstruction hospitals such as the Amputation Center at the Percy Jones; and the servicing and training of recruits (corpsmen, nurses, medical units), so much the field and duty of the Great Lakes station. It comprises a self-contained unit about the size of Duluth. Any such peacetime unit would gradually arrive at a fixed personnel. Not so with these gigantic military groups. Change and turnover is the essence of their existence. From that fact stems much of the need of the oppressive "book work" that appears to insulate the civilian doctor recruit from actual medical work.

For the recent medical intern that necessary affliction is a milestone in his life; it may greatly advance his training as all previous wars have done. But the price mounts for that age group (often well-established specialists; and their need to spark the various units and train younger men is absolute) from 35 to 55. It is not alone that these men have left remunerative practices, but more than that. They had arrived at high schedules of living costs. Most of these men have children entering the expensive stages of school and college; insurance policy premiums click around with the certainty of taxi meters; that house mortgage—the price of advancing the family into the golf club district. I need not further pursue this dolorous recital of sequences so familiar to everyone. The point is, that whereas the further postwar training of the former intern groups is a "must," these older men stand to suffer grievous dislocation; and the longer the war lasts, the more decisive this may become. Their restoration to their former status, where it is desired, is an ethical responsibility that each worthy medical society must automatically underwrite. Who else will be available to teach the oncoming groups? Many who have limped through to local indispensability via a lumbar fibromyositis or a flood of industrial contracts, might well be assigned exchange professorships in distant lands to do the medical policing of the postwar decades. The position would provide opportunities both for culture and safety.

Well, these are my own observations; the comments are not the result of any specific "beefing" that I heard. On quite a different wave length I catch from the ether that the public likes our individual output well enough, but our group pronouncements and verdicts are anathema. To begin with, all the Chicago newspapers on March 23, 1945, gave as much attention to Sister Kenny as to the war. Indeed she (as usual) was a part of it. She shares many qualities of humility, aggressiveness and powers of personal appraisal with Harold Ickes. She has read the life of Pasteur, but so far as I know, she has never appraised her faith against that of an Australian Sheepherder. It may be even that in such open spaces the kindest of deeds would go unnoticed. Accordingly, their needs must flail violently to raise enough dust to be noticed.

Incidentally, infantile paralysis is the medical weather vane of emotional appeal. The public is blithely unaware of the miracles accomplished among our armed forces in controlling deadly transmissible disease. Meningococcic meningitis: this terrible disease has been treated in large numbers in all military camps and hospitals with almost uniform recovery and without complications. Great advances are here in controlling the complications of scarlet fever, and there is hope also for rheumatic fever. Medicine has earned the right to ask for a "Better Press."

The Medical Guild may be next in line for some of the traditional mass hate—a technique so often directed against the strong and well entrenched. It is regrettable that Sister Kenny lends herself to this medium. The acclaim she craves from the medical profession seems to be very dear to her.



President, Minnesota State Medical Association.

# Editorial

CARL B. DRAKE, M.D., *Editor*; GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

## GAS GANGRENE

A CASE of gas gangrene, recently observed in a civilian hospital stimulated the author to review the recent literature on the subject, particularly those reports emanating from the armed forces both of this country and Great Britain.

Gas gangrene may be caused by any one of several anaerobic organisms, the most common in the order of frequency being *Cl. welchii*, *Cl. septicum* and *Cl. edematiens*. These bacteria are abundant in the flora of the intestinal tracts of man and domestic animals so that in a high percentage of wounds contaminated by fertilized soil, it is possible to recover the organisms even in the absence of gross evidence of infection. MacLennan<sup>4</sup> of the British Army reported as high as 55 per cent positive cultures from wounds suffered during the North African campaign in spite of technical difficulties encountered in doing bacteriology in the field. A similar study of gangrenous areas about the feet of diabetic patients carried out by Mead and Manson<sup>5</sup> at the University of Minnesota resulted in almost 100 per cent positive cultures for gas bacillus.

This infection is fortunately not often seen in civilian practice but should always be kept in mind in puncture wounds or those with large amounts of devitalized tissue. Gas is formed in the tissue by the destruction of protein and from the fermentation of muscle sugar. The gas liberated is hydrogen. In this war, according to MacLennan, .7 per cent of all wounds develop gas gangrene. The incubation period varied from five hours to six days. The virulence of the infection, like that of tetanus, is usually directly proportional to the length of the incubation period. The clinical picture of gas bacillus infection is that of an overwhelming toxemia. The symptoms are usually out of proportion to the degree of injury. There is a rapid pulse, a relatively low temperature and often a picture of persistent shock not relieved by blood transfusions. A rapidly progressive anemia, more rapid and more severe than in almost any other infection, is a striking feature of the disease. The diagnosis should be made by

culture in patients having this picture before there is any evidence of gas in the tissues. Emphasis should be laid on the fact that the presence of gas in the tissues is a late and often fatal sign of gas bacillus infection. Cellulitis caused by anaerobic streptococci is the only condition which is apt to be mistaken for gas bacillus infection. It occurs as a rule in grossly contaminated wounds which have been neglected. The condition produces a picture of sepsis but the severe toxemia seen in gas gangrene is absent. Differential diagnosis is best made by culture. Unnecessary amputations have been done. Adequate incision and drainage in conjunction with sulfonamide therapy is usually adequate.

There is no specific treatment for gas gangrene and it is the consensus that all proved available agents should be used. The surgical treatment should include multiple incisions, complete debridement or amputation as the situation may indicate. Sulfonamides are a valuable adjunct to therapy and probably should always be used. Antiserum is biologically sound therapy and remains a valuable agent. The polyvalent serum is recommended for intravenous use in doses of 50,000 international units every six to eight hours. Three doses should be given. There is no proof that the topical use of antiserum has any value. Jeffrey and Thomson<sup>2</sup> and Herrill<sup>1</sup> are convinced that penicillin is a valuable drug given intramuscularly or by the continuous intravenous method in doses of 100,000 to 200,000 units in twenty-four hours. Keefer<sup>3</sup> also includes gas bacillus infections as an indication for the use of penicillin. Some authorities feel that x-ray therapy in doses of 75 roentgens twice a day is of value. It is stressed that unless portable apparatus is available, moving the patient may do more harm than is gained by the treatment. Some use has also been made of local refrigeration but its value is still unproven. No dogmatic therapeutic regime can be laid down. The judicious use of a combination of these various agents is the best procedure at the present time. Supportive therapy in the form of transfusions and adequate fluid administration should also be used. Im-

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provement is usually rapid in cases that react favorably.

Figures from the Surgeon General's Office show that in World War I the mortality rate in gas gangrene was 48.52 per cent. Available figures for the present war indicate a mortality of 30 to 40 per cent. It would seem therefore that the addition of sulfonamides and penicillin has definitely improved the prognosis in this disease.

ROSCOE E. DEAN, JR., M.D.

### References

1. Herrill, W. E., et al.: J.A.M.A., 125:1008, (Aug. 12) 1944.
2. Jeffrey, J. S., and Thompson, Scott: Brit. J. Surg. (supp.), 32:159, (July) 1944.
3. Keefer, Chester S.: Chairman of the Committee on Chemotherapy of the National Research Council and Consultant to the Office of Scientific Research and Development, War Production Board, Office of Civilian Penicillin Distribution.
4. MacLennan, J. D.: Lancet, 1:204-207, (Feb. 12), 1944.
5. Mead, J., and Manson, E.: Personal communication.

### BENEFITS FOR VETERANS

IT IS to be expected that the members of our armed forces will receive special consideration on their return to civilian life. Industry is confronted with the problem of proper compensation for both those returning to their former jobs and for new employes. Those who have taken their places, in many cases women, will have to be replaced by former employes. Those who have received much greater compensation while in service and who have acquired families will not be able to exist on their prewar salaries. After all, they have been serving American industry during their years in the armed services, and are entitled to a raise.

Servicemen who have been wounded and sick while in service should receive the very best medical attention in order that they may take their places in civilian life and become self-supporting citizens. Cripples will receive special consideration both in rehabilitation and financial compensation. The families of those killed in action should not receive miserly compensation. It would shock right-thinking citizens if they knew what small monthly checks widows of soldiers in previous wars are receiving today. We note that a bill to increase the monthly allowance of widows of those killed in action from \$50 to \$75 and a proportionate increase to their children has recently been introduced in the House of Representatives. It is not that sufficient funds were not handed out to veterans of previous

wars in the matter of bonuses, free hospital care for all veterans irrespective of service-connected disabilities and the like. Just consideration, however, has not been given those who actually suffered as a result of service to their country. A complete revision of the laws relating to this matter is in order.

Provision of hospital care for all veterans of World War I irrespective of any service connection of disabilities has always been protested by the medical profession. Extension of this service to veterans of World War II was to be expected, and has been put into effect. The facilities of the Veterans Bureau will be taxed to the utmost by the veterans of the present war, and hospital care should be restricted to war casualties.

It takes one's breath away to learn that the present Congress had been in session only a couple of days when a bonus bill for World War II veterans was introduced proposing bonus payments up to \$5,000, and involving a cost of forty to fifty billion dollars. Furthermore, more than 200 veterans' benefit bills were introduced in the first two months of this session, one of them being the proposal of a full year's pay on discharge. Another bill would give \$50 a month at the age of sixty to any World War I veteran who had engaged in a campaign or expedition in which a campaign medal was given prior to December 7, 1941.

It is to be hoped that Congress will be a little realistic in the matter of benefits to veterans. At a time when economists are concerned as to how taxes can be reduced to enable private industry to expand after the war to enable taxes to meet payments on our huge national debt and expanded governmental costs, an additional load of billions for bonuses and the like is simply out of the question.

There is little justification for any feeling that there has been profiteering during the present war. Wages in war industry have been plenty high, but taxes have taken their cut. Those with large incomes have found that taxes have reduced net incomes far below prewar times. This has been necessary and right. But any feeling on the part of those in service that they are in justice entitled to a cut in war profits in the form of bonuses is unjustified.

There is every evidence that we are about to terminate the war successfully as far as the defeat of the enemy is concerned. It would be tragic

c if the members of the armed forces should be instrumental in so increasing taxes as to bankrupt the country.

## CARBON TETRACHLORIDE

CARBON tetrachloride is a colorless fluid with an etherial odor which is used extensively in industry because of its solvent action on guns, resin, and fats. It is the active ingredient of many cleaning fluids, and because it is non-inflammable is also used as a fire extinguisher. One well-known cleaning fluid is marketed as Carbona, and the fire extinguisher Pyrene consists of carbon tetrachloride. It has also been used as an anthelmintic in the treatment of hook-worm infection. In 1933 some thirty million pounds of carbon tetrachloride were manufactured. The amount was more than doubled in 1938.

The extremely toxic qualities of the substance have not been sufficiently emphasized. Containers of cleaning fluids, eleven different varieties of which, all containing carbon tetrachloride, were found for sale at one New York department store, as a rule emphasized the safety factor of the non-inflammable quality of the preparation, but warnings of the poisonous qualities of the preparation if present at all were in small type.

Carbon tetrachloride can exert its toxic action through inhalation of the fumes, and in confined spaces with poor ventilation can cause serious and even fatal poisoning in a comparatively short period of time. If ingested, very small doses have proven fatal. Of the reported fatalities in one series collected in 1935, half were due to its use as an anthelmintic. Children have died from as small doses as 0.3 to 1.0 c.c. taken internally. Adults with reduced calcium in their systems or alcoholics have poor resistance to carbon tetrachloride.

The substance exerts its toxic action on the liver, kidneys, heart, and adrenals. These organs show necrosis and fatty degeneration. The chlorine of the  $C\ Cl_4$  molecule is converted to  $HCl$  in the body and the poison resembles that of phosgene.

Gennebra in 1939 collected 141 reported cases of poisoning from carbon tetrachloride with thirty-nine fatalities. Many certainly have not been reported. Proper precautions are probably taken by industry, or there would be more cases

of poisoning. Most physicians never see a case, but some mild cases are doubtless overlooked.

There is no governmental regulation of the sale of carbon tetrachloride. Its widespread use indicates its commercial value. However, the danger of poisoning from the fumes or ingestion of preparations containing the substance should receive more emphasis on labels and sales of cleaning fluids for household use should be limited to a pint.

## NAVY DOCTORS—AND THE TYPES OF DUTIES TO WHICH THEY ARE ASSIGNED

"What types of duties are Naval medical officers assigned to?" . . . "What kind of assignment will I receive?" . . . "Will I be used in my specialty?"

Such are typical of the questions being asked every day by doctors who are considering the U. S. Navy as their next call . . . who want to assist at this crucial hour when more and more fighting men are requiring medical and surgical attention. And, of course, these questions are very, very important questions, for in their answers is wrapped up the doctor's concern in utilizing constantly all of his talents and skills and in keeping up with all of the developments and innovations in the field of medicine.

Now for the first time a categorical description of the principal duties of medical officers in the U. S. Navy has been prepared. Although the Navy cannot promise a candidate his exact preference for duty, it makes every effort to place him where he can work most effectively. This applies particularly to doctors who have had special training, for the value of placing specialists on duty where they can best use their experience is clearly recognized.

The possible assignments to Naval medical officers are divided into five categories. Outlines of these duties follow:

- With the Marine Corps.*—On an invasion a doctor assigned to this duty is with the front line, as a rule going in with the third or fourth wave. The duty of this officer is comparable to that of an Army combat doctor. He works in the field.

On Marine duty, the Naval doctor may be assigned to field hospital in Marine divisions in which all major surgery is initially done on the wounded. The doctors in these hospitals have an opportunity to do more real surgical work than those stationed in major rear base hospitals. They are called upon to use great imagination and initiative.

During the initial physical phases of landing, all serious cases are evacuated to transports and hospital ships for surgery. After sufficient beachhead has been established, field hospitals are set up.

- Aboard a Destroyer.*—There are 149 to 325 officers and men assigned to duty on a destroyer depending upon the size of the ship. Usually one medical officer is assigned to a destroyer and he has charge of all medical

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material and stores aboard, and the treatment and care of the sick and wounded.

He also functions as a sanitation and health officer by advising the Commanding Officer in matters pertaining to the proper care of food and water and the general hygienic condition of the ship itself.

The medical officer's professional duties are similar to those of the general practitioner in a small community with emphasis on the preventive aspects of medical practice. Indeed, a destroyer is a small community in itself, and the medical officer enjoys the same respect and prestige from the crew as he does in civilian life.

*3. Aboard Large Ships (Battleships, Cruisers, Carriers):* The normal complement of a battleship is 1,750 to 2,600 officers and men; a cruiser, depending on whether it is light or heavy, from 700 to 1,550 officers and men; an aircraft carrier from 2,800 to 3,500 officers and men.

Three to five medical officers are assigned to the larger ships. The senior medical officer is responsible to the Commanding Officer in the same way as the destroyer medical officer described above, for the medical supplies and equipment and in an advisory capacity on matters of hygiene. The care of the sick and wounded is a greater problem of course, but is facilitated by the larger sick-bay space and elaborate equipment, such as operating tables and x-ray machines, pharmacy laboratory, et cetera.

These large air-conditioned spaces which make up the sick bay of the modern super dreadnaughts are small hospitals and function as such in every way. All types of surgical cases and illness are treated here.

The medical officers of these large ships also act in a consultant capacity to smaller vessels. In isolated ports, destroyer sailors come aboard for blood tests, X-ray examinations, treatment of fractures, and for surgical operations.

*4. On an Advance or Rear Base, on a Hospital Ship, or in a Hospital in the U.S.—*A doctor functions in any one of these assignments in the same way as he would when practicing general medicine and surgery or as a specialist in a large city. He has the finest equipment available to him. He works and consults with associates in the same way as he does in civilian life.

Specialists are usually assigned to shore and hospital ships in order to take advantage of their skills. For example: at the Naval Medical Center, Bethesda, Maryland, there are specialists in orthopedics, neuro-surgery, tropical diseases, chest surgery, internal medicine—indeed all the professional specialties.

*5. Assignment to Medical Research.*—Laboratory research under the cognizance of the Bureau of Medicine and Surgery follows in general the same line as that of important research centers in civilian medicine but is channelled according to military interests and with military application in view.

Naval Research Laboratories are constantly working on ways to improve service to the Fleet, and to the Advance and Rear Base Hospitals. The use of plasma penicillin, the latest drugs, new methods in the treatment of burns, the changing problems in war wounds are all under the continuous scrutiny of the Naval Research Centers.

The Navy's need for doctors in all of these types of duty is still very acute, and every eligible doctor is needed now. Doctors previously declared physically disqualified are being reconsidered in view of a modification of physical requirements. Such doctors are urged to contact Lieut. R. F. Crawford of the Navy's Medical Corps at the Office of Naval Officer Procurement, 141 W. Jackson Boulevard, Chicago, WABash 2900, in order to make an appointment for physical examination to ascertain whether or not they are qualified.

Doctors up to sixty years of age are now being considered by the Navy. Complete information may be obtained from Dr. Crawford. The doctor's tasks in the Navy are clear and concise. The need for men to fill these assignments is critical. Help . . . NOW!

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### COMMITTEE ON POSTWAR PLANNING

Report of the Subcommittee on Revision of Program  
for Enrollment of Medical Students

After a careful analysis of present and probable post-war needs for medical service and the supply of physicians available to meet these needs, your subcommittee is convinced a serious shortage of physicians will develop in this country unless there is a continuance of the full complement of medical students. Under existing conditions, this will not be possible. There is no provision for the deferment of suitable qualified applicants in premedicine and medicine subsequent to 1945.

It is estimated that during 1945 about 75 per cent of the normal enrollment of first year medical students can be provided as follows: Army (ASTP) 28 per cent, Navy (V-12) 25 per cent and physically disqualified for military service (including 4F, returned veterans, aliens and others) and women 22 per cent. At present the only prospects for students during 1946 can come from the following sources: Army none, Navy 10 per cent and physically disqualified and women possibly 30 to 35 per cent. Hence there will be unfilled about two thirds of the places in the freshmen classes of approved medical schools or 1,500 vacancies.

Recently there has been introduced into the Senate by Hon. Mr. Ellender a bill known as S. 637, dated Feb. 25, 1945, that would authorize "the release of persons from active military service and the deferment of persons from military service, in order to aid in making possible the education and training of physicians and dentists to meet essential needs."

Your subcommittee, after a careful study of the bill, believes it embodies the essential provisions to meet the current defect. It recommends the committee express approval of the general features of the bill and support the bill by means of appropriate action through its constituent organizations and other organizations and individuals interested in the health and medical care of the nation.

(Signed) Ernest E. Irons, M.D., Morris Fishbein, M.D., Victor Johnson, M.D., Harold Diehl, M.D., Harold C. Lueth, M.D. (J.A.M.A., April 7, 1945.)

# MEDICAL ECONOMICS

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Edited by the Committee on Medical Economics

of the

Minnesota State Medical Association

George Earl, M.D., Chairman

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## MEDICAL CARE THERMOMETERS SHOW RISING PUBLIC INTEREST

Both publicly and behind the scenes, interest in attaining a better distribution of medical care continues to hold the spotlight. The number of articles concerning this subject which are currently appearing in leading magazines and newspapers is only one indication of that interest. But most significant of all thermometers of rising public opinion that could be had, perhaps, is the number and character of proposals made to numerous state legislatures for developing voluntary medical care plans on the one hand, and compulsory cash sickness plans on the other.

### Voluntary Medical Care Bills Enacted

So far in 1945, laws authorizing organization and operation of nonprofit medical service plan corporations on a voluntary basis have been enacted in Tennessee, Iowa, North Dakota and Minnesota, stepping up to twenty-one the number of states where such plans are now operative. Similar bills are in process of enactment in Kansas and South Dakota. In addition, a law permitting a nonprofit hospital service corporation to operate a supplementary medical service plan in conjunction with its hospital plan has been enacted in West Virginia.

It is understood that the Iowa Medical Service, sponsored by the Iowa State Medical Society, expects to offer to the public a medical plan which in some aspects is broader than any plan now operating under medical society auspices. Subscribers will be insured against the costs of surgical and obstetric services in or out of the hospital and medical care for hospitalized illnesses after the first three-day period in the hospital. X-ray examinations will be covered not to exceed \$15 for each service; \$10 will be allowed for anesthesia. The basic cost is to be \$1.00 for individuals and \$3.25 for the family contract.

### Compulsory Health Insurance Pressure On

Actual pressure in favor of one or another types of compulsory health insurance has been greatest in the states of California, Washington, Massachusetts and New York.

Here in Minnesota we had a sampling of proposed compulsion by way of a cash sickness bill that was introduced into the legislature under which 1 per cent of an employee's wages or salary was to be deducted each month and deposited in a benefit fund established by the state and kept in the state's general fund. The bill proposed that an employee who was unable to work because of sickness or illness, would receive a weekly payment ranging from \$7.00 to \$20.00 over a period up to twenty weeks, commencing two weeks after disability. However, expected pressure for the bill from certain groups failed to materialize and nothing further came of it. In the state of Washington, also, the legislature adjourned without taking any action.

### California Plans in the Limelight

The California legislature was subjected to the largest grist of compulsory proposals, but among these only three seem likely to gain serious consideration—those, namely, sponsored by the California State Medical Association, which is semi-voluntary; by Governor Warren, and that sponsored by the CIO.

Governor Warren's bill proposes to establish a California Health Service Authority in the Department of Public Health, in addition to the existing officers and board. This authority is to consist of 11 members to be appointed by the Governor. Its executive-secretary, also, is to be appointed by the Governor at a salary of \$12,000 a year.

Governor Warren's bill is similar, in many respects, to that sponsored by the CIO. Both propose that their respective systems be financed

by a payroll tax of 3 per cent shared alike by employer and employee on salaries up to \$4,000 under the Governor's bill and \$5,000 under the CIO proposal. Both cover essentially the same groups now covered by the California Unemployment Insurance Act, which excludes farmers, domestic servants and self-employed. However, in both instances, indications are that future expansion will cover these groups. The CIO bill, in addition, makes arrangements to cover indigents.

As to benefits, services of the general practitioner and specialist are offered in the home, office and hospital, as are hospitalization, laboratory services, x-ray, physiotherapy and appliances. Governor Warren's bill specifically states that referrals to specialists must be made by general practitioners. The two bills differ in the method of paying the physicians: the CIO measure specifies capitation for general practitioners and fee for service for specialists; Governor Warren's bill proposes paying all physicians on a fee for service basis. In both bills beneficiaries have free choice of physicians and hospitals, and physicians may accept or reject patients.

In presenting his Bill to the Legislature, Governor Warren stated: "I am not for socialized medicine where doctors are put on the public payrolls and medical care of the people is financed by public funds. I don't believe in that system. I do want to spread the cost of medical care by compulsory contributions of workers and industry, both of whom will be the beneficiaries."

#### **California Medical Association Bill Semi-Voluntary**

The California State Medical Association is sponsoring a semi-voluntary plan to tie in with and supplement existing voluntary plans of which there are many in the state. Under its bill, no new bureau is proposed and no additional governmental employees are contemplated. The bill is in the form of an amendment to the Unemployment Insurance Act which has proved to be more than adequate for unemployment relief under the existing tax structure. It is proposed that it be further utilized to assist in spreading the cost of medical care.

The bill has three main provisions:

1. To encourage people to enroll in existing voluntary, nonprofit medical and hospital plans, the bill proposes to cut the employee's 1 per cent

payroll contribution to the unemployment fund in half. Thus an employee who enrolls himself and his family in a nonprofit medical and hospital plan would thereafter be taxed one-half of 1 per cent instead of 1 per cent by the state unemployment act.

2. The bill allows employers to make payroll deductions for all employees for payment of dues or premiums for approved hospital, medical or surgical prepayment plans. Exceptions under this rule are made for employees who state in writing their objections to inclusion in such plans.

3. The bill provides that regular unemployment benefits will be paid to employees who are hospitalized for illness and who are not covered for hospitalization by an approved nonprofit plan.

It is felt that if this bill becomes a law, the bulk of the low and middle income population of the state will enroll in voluntary plans. This, many people believe, can be accomplished without increasing the tax structure and further penalizing California business and industry. At the same time, because private enterprise always operates more efficiently than governmental monopolistic bureaus, that are so seldom subjected to the acid test of an auditor's balance sheet, the people will get more value for each dollar paid than they ever will through a compulsory plan.

#### **Legislators and Public Uncertain**

There is a good deal of uncertainty in the public mind about the various compulsory proposals that are being hatched. Where will they lead? Are they really needed? The cost of the proposals is likewise an important factor. Legislators, apparently, have not found clear-cut answers. Moreover, there seems to be a gap between the attitude of labor leaders and some of their nominal followers. The latter, always restless over the numerous and, in total, large deductions from their pay envelopes, are not unanimously anxious for further compulsory deductions.

Business and professional interest have questioned the need and desirability of such legislation and have conducted researches which have reached a point at which they are able to present substantial evidence in dispute of many of the claims of proponents raising many serious doubts in the minds of the legislators.

In most of the states, many of those who would

be covered by the proposed legislation are already covered through group or individual policies underwritten by health and accident companies, and other types of organizations, and the number so covered is rapidly growing. Then, too, the chief medical care problem is in rural areas, but for practical reasons, none of the measures include rural populations in their coverage.

However, the fact that not more than one or two, and perhaps none, of these state compulsory health insurance measures is likely to be adopted this year, is no sign that interest in such measures is waning. A number of states have pending proposals for legislative studies; New York and Washington have already adopted such proposals. A continuation of a good deal of activity in this field is to be expected.

#### National Health Legislation in the Offing

Washington observers seem to agree that, in the matter of federal proposals for the extension of medical care, there is something coming in the way of definite recommendations following the enactment of the Hill-Burton Hospital Construction Bill. But, as has been pointed out by Surgeon General Parran, and reaffirmed by the Senate Subcommittee on Wartime Health and Education, often referred to as the Pepper Committee, discussions of detailed methods and plans for the extension of medical care are premature unless and until adequate hospital and medical center facilities have been provided in those communities which, in the opinion of state professional groups, require them.

Many Washington writers have been warning their readers to watch for a new Wagner Bill in this session of Congress. They point out that the first Wagner-Murray-Dingell Bill drew much fire and considerable criticism which indicated the principal objections of medicine and other groups. Many of these objectionable points, it is predicted, will be eliminated from the new Wagner Bill in the hope of gaining wider support.

#### Senator Pepper Has Different Approach

Observers have commented that Senator Pepper has indicated an understanding and appreciation of medicine's position which is entirely different from Senator Wagner's approach. He has shown a sympathetic attitude towards voluntary

prepaid medical care plans but insists that these, to accomplish the ends sought, must provide complete, rather than limited, coverage and must be offered at a low cost. Repeatedly, Senator Pepper has sought to draw witnesses, appearing before his Committee, into discussions of the idea of federal grants to state, or even to groups which have acceptable prepaid medical care plans, not suggesting federal control but rather a broad system of subsidies to assist these plans to reach all elements of the population and, in his opinion, operate more effectively. Senator Pepper has expressed doubts that the American people are now ready, or ever will be, for a compulsory health insurance plan. This is in sharp contrast to views held by Senator Wagner.

While Senator Pepper has sought suggestions of interested parties of all shades of opinion, Senator Wagner has apparently been content to listen only to the views of social planners and labor leaders who take the attitude that lack of facilities for adequate medical care among working people has resulted in a serious condition as respects the general health of the nation. These latter advocate a national system of compulsory medical care upon the theory that the health of the nation could be promptly and materially bettered as a result.

#### No More Than They Are Now Doing

Again it must be emphasized, that this type of argument is by no means supported by the results of similar plans in European countries. Some of these countries have had compulsory plans in force for many years, but the results from the point of view of improving national health, have not been notably more satisfactory than those attained in this country through the system of private practice here.

The busiest men in the world today, American doctors, are frankly puzzled by the hue and cry, but anxious to do everything within their power to improve conditions. They are, however, at a loss to know how any government bureaucracy could better organize their work or enable them to do any more than they are now doing. They are acutely aware, also, of the shortage of hospital beds which would inevitably become acute if such a system, either at state or federal levels, were imposed.

## IN MEMORIAM

### MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

J. F. Du Bois, M.D., Secretary

#### Columbia Heights Woman Sentenced to Eight-Year Term for Criminal Abortion

*Re: State of Minnesota vs. Ruth Lindholm*

On April 6, 1945, Mrs. Ruth Lindholm, fifty years of age, 3910 Lookout Place N. E., Columbia Heights, was sentenced to a term of two to eight years at hard labor in the Women's Reformatory at Shakopee for criminal abortion. The defendant was convicted following a trial lasting eight days in the District Court of Hennepin County. Mrs. Lindholm was arrested on February 6, 1945, by Minneapolis police officers following the admission of a young girl to Minneapolis General Hospital suffering from the after-effects of a criminal abortion. The patient stated she paid the defendant \$35.00 to do a criminal abortion and that it was performed by the defendant at the patient's apartment by the use of elm stick. The patient also stated that she had a previous abortion in June or July of 1944, that was performed by Mrs. Lindholm.

Mrs. Lindholm has a previous conviction for manslaughter in the first degree, following a criminal abortion, on September 26, 1929. On October 3, 1929, the defendant was sentenced to a term of five to twenty years in the Women's Reformatory at Shakopee for that offense. She served less than two years, being released on May 15, 1931. The defendant was again arrested on July 17, 1934, charged with criminal abortion. On July 19, 1934, the defendant was adjudged insane and committed to the State Hospital at St. Peter. Several attempts were made to secure the release of the defendant from the State Hospital at St. Peter. However, the records in the District Court and Probate Court at Anoka disclose that no order was signed for the release of this defendant from the State Hospital at St. Peter. On September 21, 1944, a notice was received by the Probate Court of Anoka County from the Superintendent of the State Hospital at St. Peter advising that defendant "is hereby discharged recovered in accordance with the provisions of Sec. 4098 Revised Laws 1913." The present case discloses that it was not long before Mrs. Lindholm returned to the abortion racket. It is the hope of the Minnesota State Board of Medical Examiners and the authorities in Hennepin County, that the defendant, for the good of society, will be required to serve her sentence as imposed by the Court.

#### ENGLISH COMES FIRST IN NEW U. S. PHARMACOPOEIA

For the first time, the English language will take precedence over Latin in the U. S. Pharmacopoeia, the official compendium of drugs. After six years of discussion in the U. S. P. Committee of Revision, of which Dr. E. Fullerton Cook is chairman, it was decided that the new Pharmacopoeia, scheduled for publication in December, would carry the English names of drugs first, followed by the Latin. Medical members of the Committee were chief advocates of the change.

The U. S. Pharmacopoeia was first published in the 1820's, and has been published at ten-year intervals since. Recently, the Pharmacopoeia Committee decided a new issue should appear every five years, but it is understood that this decision may be reconsidered. Because Latin had been the language of science, it was used in drug and medical nomenclature.

## In Memoriam

### ALEXANDER H. DUNLOP

Dr. A. H. Dunlop of Crookston died March 19, 1945, after a brief illness at the age of eighty-seven.

Dr. Dunlop was born September 14, 1857, in Ontario, Canada. He graduated from Queens College at Kingston in 1875 and received his M.D. from McGill University in 1882. The same year he began practice at Crookston, and continued until a few years ago.

He took postgraduate work on several occasions in New York or at McGill University. He was a member of the Red River Valley Medical Society, the Minnesota State and American Medical Associations, and was local surgeon for the Great Northern Railway. He was also a member of the Masonic order, the Modern Woodmen and the Elks lodge.

In 1912, Dr. Dunlop married Annie Bolie, who survives him.

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### FRANK S. WARREN

Dr. Frank S. Warren, for many years a resident of Faribault, Minnesota, died February 19, 1945, at Washington, D. C., where he has resided since 1931.

Born in Saint Paul, May 9, 1874, he attended Saint Paul public schools, and graduated from the University of Minnesota medical school in 1896. After interning at the Ancker Hospital in Saint Paul, he began practice at Faribault in 1898.

On several occasions Dr. Warren took postgraduate study at the New York Postgraduate Medical School. During World War I he served a year in the Army. He served for many years as vestryman of the Cathedral of Our Merciful Savior and was active in local Masonic circles. He was a member of the Rice County Medical Society and of the state and national medical associations. He is survived by his widow and daughter, Alice.

### ANTI-GERM ACTIVITY FOUND IN BUTTERCUP JUICE

The possibility of a remedy like penicillin being developed from buttercup juice appears in a report by Dr. Beatrice Carrier Seegal and Dr. Margaret Holden, of Columbia University College of Physicians and Surgeons in *Science* (April 20).

Growth of streptococci, staphylococci, pneumonia, anthrax and tuberculosis germs and a number of other micro-organisms that cause sickness in humans was stopped by juice pressed from buttercup leaves, stems and blossoms. A steam distillate of this pressed juice was also effective. Anemone juice gave similar results.

The use of the buttercup juice as a remedy in infections was prevented by its toxicity for laboratory animals. The distilled juice is less poisonous than the whole juice. Chemical methods are now being developed, the scientists report, in an effort to separate the poisonous from the anti-germ substances.—*Science News Letter*, April 28, 1945.

# Minneapolis Surgical Society

Meeting of December 7, 1944

The President, Daniel MacDonald, M.D., in the Chair

## DIVERTICULA OF THE JEJUNUM

JAMES A. JOHNSON, M.D.

Minneapolis, Minnesota

In 1941 I presented before this society a discussion on "Diverticula of the Alimentary Canal"; tonight I am going to show you an interesting specimen of multiple diverticula of the jejunum.

There are two types of diverticula of the small bowel: (1) the congenital represented by Meckel's diverticulum; (2) the acquired or pulsion type. The etiology of the pulsion or herniation type which this case represents has been definitely established by Edwards and others. The diverticulum presents itself as a herniation through the weakened areas in the bowel where the vessels penetrate through the muscular coat. The diverticula, as a rule, are found on either side of the mesenteric border where the vessels show at the base of each pouch. Pulsion diverticula of the small bowel are almost entirely confined to the jejunum. It is only when the entire bowel is involved that they are found in the ileum.

The first case was reported and described by Sir Astley Cooper in 1844, when he found pouches in the proximal portion of the small bowel during a postmortem. The first roentgenological diagnosis was described by Case in 1920. Rankin and Martin estimated that it would be found only once in every 25,000 routine roentgenological examinations of the gastro-intestinal tract. Edwards collected sixteen cases in a period of twelve years at Kings College Hospital in London; eight were found at postmortem, four at operation and four on x-ray examination. The average age was fifty-five. Edwards carefully searched 881 cadavers and found some evidence of mesenteric diverticula in five cases. The small bowel is the least frequent location for diverticula in the alimentary canal. According to Kozinn and Jennings reporting a case in the *American Journal of Diseases of Children*, September, 1941, only 187 cases can be found in the literature, and most of these have been reported during recent years. It is found most frequently during postmortem examination. Those discovered at postmortem are about three times as frequent as by x-ray, or operation.

The symptoms result from retention of food, inflammation, or obstruction, especially from a volvulus. There is often vague upper abdominal distress after meals, and when obstruction occurs, there are periods of recurrent attacks of vomiting. The diagnosis is made by x-ray examination and this can only be accomplished when the pouch fills so that they can definitely be recognized. The treatment will depend upon

the severity of the symptoms. Many of the smaller diverticula produce no disturbance and are of very little importance. It is only when marked symptoms of inflammation or obstruction appear that operation is indicated.

### Case Report

H. D., aged seventy-two, was admitted to the hospital September 24, 1944. At the age of twenty-two he had had an attack of pneumonia; otherwise he had always been in good health. His present trouble began twelve months ago with a great deal of bloating after meals. This gradually became a severe distress and he would regurgitate his food, and recently he had developed attacks when he would vomit a great deal of food, apparently retained for a considerable length of time. His symptoms had gradually increased and he had lost about ten pounds during the past six months.

On examination he was a poorly nourished, cachetic old man. There were active peristaltic waves in the upper abdomen with a diffuse soft mass indicating some type of obstruction. His general condition was fair except that he had a chronic cough and was quite dehydrated. The blood pressure was 135 systolic and 88 diastolic. All laboratory examinations were essentially normal except that he was slightly anemic. X-ray examination revealed that the stomach was displaced to the right side of the abdomen by a soft mass on the left side. In this soft mass were several pouches where the barium was retained.

On September 30, 1944, he was operated upon. The gall bladder and liver were normal as were also the ducts and pancreas. There was no evidence of anything abnormal in the lower abdomen. The stomach was very large and there was marked hypertrophy of its walls, especially over the pyloric end. The duodenal portion was almost as large as a normal stomach and was very much hypertrophied. In the first part of the jejunum there was a section of bowel about 2.5 feet in length that contained multiple large diverticula at the mesenteric border. One of these diverticula had become adherent at the root of the mesentery in such a way as to cause a volvulus of that portion of the jejunum. The diverticula were all above the obstructed area and this probably was largely responsible for their development. Resection was made with an end-to-end anastomosis. The pathological report shows a specimen consisting of 42 cm. of small bowel. On the mesenteric border there are fourteen diverticula; the largest measures 5x4x4 cm. None of them showed secondary infection. Postoperative convalescence was a little slow because of his being depleted of food before the operation. For a few days he showed some disorientation and had a little trouble with bronchial cough. He was out of bed, however, in the usual time and returned to his home on October 22, at that time able to eat ordinary, regular meals.

### Discussion

DR. MARTIN NORDLAND: The occurrence of diverticulum of the esophagus is not rare but is encountered only occasionally in the average surgeon's experience. The history in a well-developed case is suggestive, but the x-ray diagnosis is necessary for confirmation of the

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diagnosis. Even with x-ray, the diagnosis is occasionally missed.

About two years ago I had a patient with a history suggestive of diverticulum in the esophagus. Eructation of food that he had ingested several days previously frequently occurred. The patient did not have vomiting. He had a sensation of fullness of the throat at times. The x-ray revealed a rather large "pouch" in the esophagus at the level of the seventh cervical vertebra. At operation an attempt was made to find the neck of the large sac. Doctor Phelps introduced the esophagoscope. The neck of the sac could not be found. During this procedure the pouch was accidentally ruptured. Investigation revealed that the entire sac was a tremendous distention of the esophagus above a carcinomatous involvement at a slightly lower level. The pouch was closed. Sulfanilamide was introduced into the surrounding tissues. The wound healed quickly without infection. Several roentgenologists who reviewed the film stated that it had the appearance of a diverticulum. Such an error could be avoided by having the patient swallow a string before surgery.

We have only done the one-stage operation for pulsion diverticulum, and we feel that there is no necessity for the two-stage operation. We feel particularly secure since we have had the advantage of the use of sulfanilamide crystals in the wound around the suture line. The one-stage operation permits a clean dissection of the sac. When the neck of the sac is accurately sutured with eye silk and covered with a muscular investment of the esophagus, clean and secure healing results. There is decidedly less probability of incomplete operation and of stricture of the esophagus postoperatively.

DR. J. A. JOHNSON (closing): I have nothing more to add except again to reiterate that the pulsion type of diverticula have the same causative factor throughout the gastrointestinal tract; that is, they are herniations through weakened portions in the tract where the vessels penetrate the muscular coats. They are common in the first portion of the esophagus, in the duodenum, most common in the sigmoid where one encounters them constantly in people beyond midlife; they are uncommon in the stomach, and are seldom found in the small bowel. It is because of this that I thought it worthwhile reporting this particular case.

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### CARCINOMA OF THE ILEUM

HARVEY NELSON, M.D.

Minneapolis, Minnesota

As compared with carcinoma of the stomach or colon, the diagnosis of carcinoma of the small bowel is difficult to make. The fact, too, that carcinoma of the small bowel is comparatively infrequent, constituting probably no more than 3 per cent of intestinal carcinomata, does not afford the opportunity for study and analysis as has been the case in the remainder of the intestinal tract. There seems to be, therefore, justification for reporting cases, if for no other reason than to accumulate information that will eventually make this condition better understood. The diagnostic problem presents a challenge which is still far from solved.

*Pathology.*—Adenocarcinoma is the most common type and may appear as a papillary growth or an ulcerative

lesion, but very often is a stenosing tumor presenting a ring constriction very similar to the annular type of carcinoma frequently found in the sigmoid. The papillary type usually protrudes into the lumen and will also cause obstruction due either to its actual encroachment on the lumen or from intussusception. As a result, some form of obstructive symptoms sooner or later occurs. Histologically the simple adenocarcinoma is by far the most common, although colloid carcinomata and rarely medullary or scirrhouss carcinomata have been reported. Because of the rich lymphatic supply in the small intestine, carcinomata here metastasize early and the prognosis, therefore, is poor. Rankin reports a life expectancy of one month to three years with the average less than one year. Others report similar experience with survival, for any extended period, a rarity.

The so-called carcinoid tumors occur occasionally in the lower ileum and cecum, although more commonly in the appendix. They rarely surround the lumen of the bowel, do not ulcerate, and even the malignant types grow slowly. As a result, blood in the stool and toxic symptoms are not found. These are generally non-malignant although a number of cases have been reported with metastasis.

Sarcomas are less frequent in the ileum than carcinomas. Horsley reports a primary melanocarcinoma of the ileum as a rare tumor. We have had one case of mucoid carcinoma of the appendix which was discovered at the time of an inguinal herniotomy when mucoid material was present in the hernial sac. A tumor mass could be felt in the region of the cecum. Exploration revealed about a pint of mucinous fluid in the peritoneal cavity apparently arising from a tumor of the appendix. The appendix was markedly enlarged and thickened and had a perforation in one side which admitted the small finger. Surrounding the perforation was a mass of reddish-colored tissue with a large amount of mucus. A microscopic diagnosis of mucoid carcinoma was made with pseudomyxoma peritonei. The patient has been symptom free now for about two years.

*Clinical Picture.*—The clinical picture of carcinoma of the small intestine does not present any characteristic pattern until actual obstructive symptoms appear. Nevertheless, the history of certain repeated or persistent symptoms should not be treated casually and warrant the most careful investigation. Probably the earliest symptoms would be irritative and, therefore, would consist of recurrent diarrhea or alternating diarrhea and constipation, a feeling of gaseous distention with a feeling of vague discomfort or fullness, especially after meals, occasional periods of nausea and a feeling of weakness and fatigue. These symptoms then persist or appear recurrently until actual symptoms of recurrent partial obstruction develop, which include attacks of colicky pain and constipation with the common complaint that defecation is incomplete and does not relieve the "gas." The obstructive symptoms are incomplete and recurrent as the fluid control of the small bowel alternately is temporarily held back by some more solid

food particle caught in the stenosed lumen and then relieved when the pressure behind it forces the obstructing material through. As the picture progresses, anemia, increasing weakness and loss of weight occur.

In some cases a tender mass can be palpated at the site of the tumor but frequently the generalized discomfort of the dilated loops of small bowel conceals the localized tender area and the abdominal distention makes palpation of the tumor difficult. However, careful abdominal palpation after decompression might disclose the tumor mass.

Secondary anemia and the finding of blood in the stools are important corroborative findings.

The x-ray offers material aid. The negative findings of an ordinary gastrointestinal study indicating a normal stomach, cap and colon in a case with persistent symptoms such as described above, should be accepted for only what its negative value is worth with regard only to the stomach, cap and colon. Such findings might be very helpful in ruling out these parts of the intestinal tract but offer no assurance as to the condition of the small bowel. As Wangensteen states, "The roentgenologist rarely identifies the presence of carcinoma in the small intestine by barium studies," but it only seems reasonable that if the roentgenologist is given the opportunity and the experience of detailed small bowel studies, something worthwhile will be contributed to our pre-operative diagnosis. I am certain the tumor in one of our cases could have been so identified. Such x-ray studies would require a one- two- four- and six-hour follow-up of barium meals instead of the usual six-hour study. Flat x-ray plates of the abdomen are of considerable value in the presence of obstructive symptoms, not only in differentiating small bowel obstruction from other forms of obstruction but also in localizing the site of the obstructive lesion.

#### Case Reports

I should like briefly to present three cases, one of which proved not to be a carcinoma but which I believe is of some interest in differential diagnosis.

*Case 1.*—J. E. M., a seventy-one-year-old man, was originally seen in April, 1943, at which time he gave a history of abdominal pain a week previous followed by a similar attack a week later. This was later proved to be incorrect as the family informed that he had had symptoms for a number of months. The pain was relieved some by both belching and passage of gas. He had had a good deal of diarrhea. He had not vomited but was unable to eat much and had lost twenty pounds in weight. The hemoglobin was 102 per cent, the red blood cell count 4,800,000 and the leukocyte count 6,600. No mass was palpable at this time. X-rays were requested but refused. The patient was then not seen for a month but on return complained of the same recurrent attacks of pain and further loss of weight. At this time a complete gastrointestinal study was done without special studies of the small bowel and these x-rays were negative. Within the next couple of weeks the patient was prevailed upon to enter the hospital and by this time a mass could be palpated in the lower right central abdomen. A further gastrointestinal x-ray was negative but detailed small bowel studies showed a deformity of the terminal ileum and

some definite evidence of small bowel infiltration. He was operated upon June 24, 1943, and an extensive inoperable carcinoma of the ileum was found. Deep x-ray therapy was administered and the patient lived until July 24, 1944.

*Case 2.*—L. A., a sixty-four-year-old man, was first seen on March 1, 1944, at which time he complained of feeling somewhat tired and having no pep. He had discontinued drinking, which he had always done very extensively. At this time he complained of some vague rheumatic pains but presented no abdominal symptoms. On October 10, 1944, he reported back complaining primarily of abdominal pains with constipation, loss of weight of about fifteen pounds, some weakness, but no nausea, vomiting or diarrhea. He located his pains across the lower abdomen and stated that he felt as though "a good bowel movement would relieve his symptoms." There was no diarrhea. The hemoglobin was 84 per cent and the red cell count 5,200,000. No mass could be palpated but the patient was quite obese, making it difficult to determine either the presence of abdominal distention or a mass. A complete gastrointestinal x-ray showed evidence of a gastritis but was otherwise negative. No small bowel study was done at this time. It was felt that the gastritis fitted in with the history of alcoholism and conservative management was, therefore, decided upon. He was seen about ten days later, at which time he was better but still complained of intermittent attacks of pain and constipation. On November 2, 1944, he began to vomit in the morning, continued to vomit a good deal during the day and finally entered the hospital that evening. At this time he was complaining of colicky lower abdominal pain, was distended, had a normal temperature, had a pulse of 100, a hemoglobin of 104 per cent, a red cell count of 6,010,000 and a leukocyte count of 16,850, with 89 per cent P.M.N. cells. His intense vomiting undoubtedly distorted the blood picture. A flat plate of the abdomen revealed a small bowel obstruction probably in the right lower quadrant with evidence of a mass in this region. Considerable fluid and gas was noted in the small intestine proximal to this area. The patient was operated on immediately and a tumor mass was found in the terminal ileum about 4 to 6 inches proximal to the cecum. An annular constriction was present and later examination disclosed a stenosis which just permitted the penetration of a Kelley clamp through the lumen at this point. There was no evidence of any metastasis. The tumor was resected and an end-to-end anastomosis done without drainage. Convalescence was uneventful with the exception of severe hiccoughs which developed on the fifth day and persisted for a week, and the drainage of hematoma on the twelfth day. At the time of his discharge from the hospital the drainage had ceased and he was feeling well.

*Case 3.*—W. W., a man, aged fifty-two, was seen at the office on November 11, 1944, complaining of abdominal pain of a colicky character for two weeks with constipation and no diarrhea. He was moderately distended. The leukocyte count and differential were normal. He was admitted to the hospital on the following day for further study and because of increased pain. He was nauseated but had not vomited. The hemoglobin was 100 per cent. The leukocyte count was 9,600, with 65 per cent P.M.N. cells. A colon study revealed a few diverticulae in the sigmoid and some apparently impacted stool in the cecum. On November 16, a complete gastrointestinal study was done which showed a fairly high degree of small bowel obstruction which appeared to be located in the distal ileum. A moderate sigmoiditis with diverticulae was noted, as was also an old scar from a duodenal ulcer. A tentative diagnosis of small bowel obstruction, possibly due to carcinoma, was made. On November 18, he was

operated on. The cecum was found to be rotated in such a manner that the ileocecal valve and ileum were located posteriorly with both the cecum and ileum being firmly bound down posteriorly. A very long and large appendix filled with fecoliths and slightly inflamed lay directly across the terminal ileum. The distal three feet of the ileum was dilated while the proximal ileum was completely normal. The cecum was normal and a careful examination of both the ileum, cecum and colon showed no evidence of any tumor. The appendix was removed and the obstructive symptoms cleared up.

### Conclusions

Two cases of carcinoma of the ileum are presented. It is believed that in one of these cases an earlier diagnosis could have been made and detailed small bowel x-ray studies would have disclosed the tumor at the time that the original gastrointestinal x-rays were done.

### References

1. Flynn, James M.: Adenocarcinoma of the ileum. *Am. J. Roentgenol.*, 48:163-166, 1942.
2. Gold, I., Roy, and Grayzel, David M.: Multiple argentaffinomas in ileum with metastasis in lymph nodes and in the liver. *Am. Jour. Surg.*, 60:144-148, 1943.
3. Griffith, F., Webb: Primary carcinoma of ileum. *Ann. Surg.*, 109:785-790, 1939.
4. Horsley, J., Shelton: Carcinoma of jejunum and ileum. *J.A.M.A.*, 117:2119, 1941.
5. Nixon, James W.: Primary carcinoma of ileum. *South. M. J.*, 30:1049-1052, 1937.
6. Rankin, F. W., and Mayo, C. W., Jr.: Carcinoma of the small bowel. *Surg., Gyn. & Obst.*, 50:939-947, 1930.

## THE PRESENT STATUS OF PENICILLIN THERAPY

WESLEY W. SPINK, M.D.

Associate Professor of Medicine  
University of Minnesota Medical School  
Minneapolis, Minnesota

A rather comprehensive subject for discussion has been chosen for me and I shall relate only some of the more essential details. This subject is changing rapidly with added clinical information but we have now had enough experience to warrant certain conclusions. During the past two and a half years, Dr. Wendell Hall and myself have supervised the treatment of approximately 300 patients who have received penicillin for various types of infections.

There are a few important principles involved in using penicillin that can be appropriately discussed at this time.

1. Penicillin is bacteriostatic in its action, that is, it acts upon micro-organisms by inhibiting the growth of bacterial cells. Under some circumstances, the antibiotic may actually kill bacteria, and this action can be considered bactericidal or bacteriolytic.

2. Penicillin is highly specific in its action upon bacteria. In this respect, it simulates the sulfonamides. This means that the clinician should know the etiology of the disease which he is undertaking to treat. Precise bacteriological data is essential if penicillin is to be used intelligently.

3. Penicillin, up to the present time, cannot be given effectively by rectum for the treatment of serious infec-

tions. There are indications that significant amounts may be absorbed from the intestinal tract when penicillin is given by mouth. But this route of administration requires further rigid clinical evaluation. Therefore, penicillin is injected parenterally. One may give the material by intermittent intravenous injections, or by means of a continuous intravenous drip. Similarly, solutions of penicillin may be given intermittently or continuously by the intramuscular route. We do not use the material subcutaneously because of the local irritative effect that it produces at times, and also, because we are not certain that absorption is as efficient as that following intravenous and intramuscular therapy. The salts of penicillin may be dissolved in physiological saline solution or in distilled water with 5 per cent glucose. Penicillin may be introduced simultaneously with plasma or blood transfusions. Because penicillin is excreted rapidly from the body through the kidneys, and because the action of the drug is one of bacteriostasis necessitating contact with the bacterial cells for an appreciable length of time, it is essential that frequent injections be made if the intermittent intramuscular method of injection is used. In serious infections, this means that material should be administered every two hours during the initial stages of therapy. There is some evidence that the control of severe infections is not entirely related to the total dose of penicillin used but also to the length of time over which even relatively small concentrations of the drug are maintained in the tissues and body fluids. Thus 100,000 units of penicillin, if properly used, will eradicate gonorrhea in the average patient, but if this amount is given in one injection, therapeutic failures are not infrequent.

Penicillin may be applied locally to septic areas in the form of solutions or ointments. Physiological saline solution with 1,000 units per cubic centimeter has been used successfully, and ointments containing 500 to 1,000 units per gram. We have found that sterile solutions of penicillin maintain their stability for several days if kept in the refrigerator. We are reluctant to use the powder of penicillin locally because it is irritating to tissues.

4. The question is frequently raised by clinicians if it is necessary to determine the blood or body fluid concentrations of penicillin. Since the methods involve the aid of biological assays, they are not too practical, and dosage schedules are now available which obviate this procedure.

5. One of the problems associated with sulfonamide therapy has been the acquired development of sulfonamide-resistant strains of bacteria. Thus far, there are indications that occasional strains of organisms may develop resistance to penicillin, but this has not constituted much of a clinical problem. We have encountered two cases of staphylococcal infections where a therapeutic failure has possibly been associated with the development of penicillin-resistant organisms.

6. The mechanism of the antibacterial action of the sulfonamides is different from that of penicillin. Therefore, is there any therapeutic advantage to be obtained in combining sulfonamide with penicillin therapy, providing the microorganisms are susceptible to the action

of both drugs? There is very little clinical information available pertaining to this possibility. Available data would indicate that the combination is more effective in the treatment of pneumococcal meningitis than when either drug is used alone. *A priori*, the efficiency of penicillin should be reduced in the presence of the sulfonamides, since the action of penicillin is dependent upon multiplying or dividing bacterial cells, and the sulfonamides inhibit bacterial growth. It is obvious that this problem needs further clinical investigation.

### Clinical Results With Penicillin

Time does not permit a thorough review of the results that have been obtained with penicillin. Furthermore, many clinical reports have appeared in recent months covering this subject. At present, we shall confine ourselves to the experience at the University of Minnesota Hospitals.

**Staphylococcal Infections.**—Penicillin is the most effective agent available for the treatment of severe staphylococcal infections. The mortality rate of patients having untreated staphylococcal bacteremia is between 60 and 80 per cent. With the use of penicillin, we have had a rate around 30 per cent. Failures with penicillin have been due to the development of an acute staphylococcal endocarditis; the use of inadequate doses; and the persistence of foci, such as thrombophlebitis, which have not been eradicated by the drug. In adults having acute staphylococcal bacteremia with or without osteomyelitis, we inject 20,000 units of penicillin intramuscularly every two hours until the infection has been brought under control. Then the dose is gradually reduced. We have used one to two million units in the treatment of a group of cases. We have had a few instances of acute osteomyelitis of the long bones where the infections appear to have been completely arrested for as long as two years after treatment. One interesting feature has been the extensive decalcification of an infected long bone following the use of penicillin, as demonstrated by x-ray films. However, with the passage of time the normal density of bone is assumed. Our results in the treatment of chronic osteomyelitis of staphylococcal origin have been less fortunate. Improvement has occurred, but in the majority of the treated cases there has been a recurrence of draining sinuses and other evidences of a failure to eradicate the infection completely. We are now of the opinion that surgery should be combined with the parenteral pre-operative and postoperative administration of penicillin. Following this practice, the outlook for these patients appears more promising. Staphylococcal infections of the soft tissues often respond in dramatic fashion to the systemic use of penicillin. This also applies to the local application of ointment and solutions containing penicillin.

**Streptococcal Infections.**—Infections due to Group A hemolytic infections such as erysipelas, bacteremia, otitis media, cellulitis, et cetera, often respond quite well to the sulfonamides. Group A hemolytic streptococci are quite sensitive to penicillin, and one can an-

ticipate rapid clearing of the blood stream of these organisms when penicillin is utilized.

Some strains of nonhemolytic streptococci, particularly *streptococcus faecalis*, are very insensitive to penicillin and therapeutic failures should be expected when this species is encountered in an infection. Most strains of *streptococcus viridans* are sensitive to penicillin.

We have not been very much impressed by the results with penicillin in the treatment of scarlet fever, tonsillitis, and acute nasopharyngitis due to hemolytic streptococci. Specific antitoxin or convalescent serum are effective agents in the treatment of severe cases of scarlet fever. Penicillin is without benefit in the treatment of acute rheumatic fever.

**Pulmonary Infections.**—Pneumococcal pneumonia responds promptly to penicillin and with relatively small doses. Less than 500,000 units have been used in controlling a severe infection. So-called atypical pneumonia of virus origin is not benefited by penicillin.

We have had very favorable results with penicillin in patients having lung abscesses. Several individuals with abscesses due to staphylococci recovered completely. Similar results have been obtained in patients with pulmonary abscesses due to mixed infections, but the micro-organisms were streptococci and staphylococci. Final recovery was achieved in these patients after other medical treatment had failed, including the administration of sulfonamides. In these cases, treatment with penicillin was carried out for days and weeks.

Empyema involving the pleural cavities and due to staphylococci, streptococci, or pneumococci has been eradicated by the aspiration of the purulent material in the pleural cavity every twenty-four to forty-eight hours, and the instillation of solutions of penicillin after each aspiration. The results were more prompt when penicillin was also given parenterally. A word of caution is necessary in the treatment of empyema with penicillin. The object of therapy is not only to eradicate the infection, but also to restore the lung to normal function. If treatment is prolonged too long, a thickened pleura with a partially collapsed lung may follow. If, after therapy has been carried out for several days, the infection has not been eliminated, and the lung has not expanded, it becomes necessary to interfere surgically.

We have had only a limited experience in using penicillin in the treatment of bronchiectasis. There is evidence that treatment is followed by improvement, and such a procedure is of value in the pre-operative preparation of a patient who is to undergo thoracic surgery for the removal of a lobe or lobes. It is highly questionable whether any type of therapy with penicillin will completely eliminate such an infection for an appreciable period of time.

**Meningitis.**—Pneumococcal meningitis is a serious disease and the untreated patient almost invariably dies. The mortality rate following the use of the sulfonamides and specific antipneumococcal serum is around 60 to 80 per cent. Treatment of a group of patients

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with penicillin has resulted in a mortality rate of approximately 20 per cent. Penicillin was given parenterally, and from 10,000 to 20,000 units were introduced intrathecally every twelve to twenty-four hours. The majority of the patients also received sulfadiazine. Until further evidence to the contrary is obtained, we plan to employ the combination of penicillin and sulfadiazine in the treatment of pneumococcal meningitis.

Penicillin is very effective in the treatment of meningo-coccal meningitis. For the acute case, we prefer to use sulfadiazine or sulfamerazine initially, because the majority of patients will respond promptly to this therapy. If improvement is not manifested within twenty-four hours, penicillin is given parenterally and intrathecally.

Staphylococcal meningitis is also favorably affected by penicillin.

*Genito-urinary Tract Infections.*—We have now treated a large group of individuals having chronic types of infections which had not been eliminated by other forms of therapy including the sulfonamides. These have included cases of pyelonephritis, cystitis, and prostatitis. The causative micro-organisms were Gram-positive cocci and bacilli. Since penicillin is excreted by the kidneys, it would be anticipated that favorable results would occur in those cases where the bacteria were sensitive to penicillin. But for reasons that are not too clear, the results have not been too satisfactory. We usually use a total dose of 500,000 to 1,000,000 units in an endeavor to eliminate these infections. Perhaps this is not enough.

*Subacute Bacterial Endocarditis.*—The sulfonamides have yielded disappointing results in the treatment of this uniformly fatal disease. A much more optimistic outlook may be anticipated for many patients, now that penicillin is available. While our results have not been too encouraging, therapeutic failures have been due to the use of inadequate doses; the presence of a strain of bacteria which was insensitive to penicillin; and the onset of cardiac failure during or shortly after the completion of treatment. Better results may be expected in patients having an infection due to penicillin-sensitive organisms; and the continuous use of penicillin for a period of three to five weeks involving the administration of four to six million units.

*Peritonitis.*—While we have only treated a few patients with a combination of a sulfonamide and penicillin, it would appear that penicillin is of definite value. The material has been given parenterally. Up to the present time, penicillin solutions have not been introduced into the abdominal cavity. Because Gram positive and Gram negative organisms are present in peritonitis, the combined use of penicillin and sulfonamide therapy appears rational.

*Gas Gangrene.*—We have had experience with only one case. Coincident with the exhibition of penicillin, a desperately ill patient recovered. While much has been written concerning the prophylactic and therapeutic

value of penicillin in gas gangrene, the reports vary from those which cite equivocal results to those which are exceedingly optimistic. During the present war, three procedures have been used in the treatment of gas gangrene: (1) the surgical excision of involved muscle; (2) the administration of specific antitoxin; and (3) the injection of penicillin. The precise position which penicillin occupied in the lessened mortality rates is not too clear.

In conclusion, penicillin is a highly specific antibacterial agent possessing extremely low toxicity for human tissues. Other antibiotics are being investigated, and there exist good possibilities that an agent or agents will become available for the control of infections due to Gram negative organisms not affected by penicillin. Our continued hope is that such agents shall provoke as few untoward reactions as penicillin.

### Discussion

DR. H. NELSON: I should like to ask Doctor Spink whether we are justified in using penicillin for prophylactic purposes in view of the limited supply for private use. In fresh compound fractures, after debridement, I have been using penicillin prophylactically by injecting 100,000 units in sterile water or saline solution, in the soft tissues about the fracture site, and have followed this up with penicillin intramuscularly for a few days. This has been used in addition to local application of sulfanilamide crystals about the fracture. Also, in certain types of surgery such as a laminectomy where there has been more than the average amount of hemorrhage, or in some bone grafts where the procedure has been somewhat involved, I have used penicillin intramuscularly for a few days. The use of penicillin prophylactically in cases of this sort, would seem justified to the surgeon and certainly does add a certain feeling of security.

I am rather interested to hear Doctor Spink's comments on the irritative effect of penicillin on open wounds and skin. I happened to have had several cases of osteomyelitis where a bone, such as the tibia, had been troughed out operatively and the sequestra cleaned up, but the area remained infected enough to be disturbing. In these cases I have been rather pleased with the effect of dropping powdered penicillin directly in the bone cavity which has, I believe, cleared up the local infection much more rapidly than with the intravenous or intramuscular administration of penicillin. I have also not noticed any irritative effect although, of course, the penicillin has not directly come in contact with the skin. I have found that there is enough secretion in the cavity to dissolve the penicillin without putting it into solution.

DR. W. W. SPINK: Although Doctor Nelson has not noted an irritating effect, we have observed signs of irritation when penicillin powder was applied to burned areas of the skin. However, Doctor Nelson has carried out essentially what the medical personnel of the British Eighth Army has done when the calcium salt of penicillin and sulfathiazole crystals were placed in wounds for prophylactic purposes. Following such a procedure, there was reduction in the number of seriously infected wounds, and no mention was made of an irritating effect induced by penicillin.

DR. R. F. McGANDY: Do you have any ideas concerning the use of penicillin for burns?

DR. W. W. SPINK: It is well known that burns become secondarily infected as a result of changing dressings.

(Continued on Page 419)

# Minnesota Academy of Medicine

Meeting of February 14, 1945

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, February 14, 1945. Dinner was served at 7 o'clock and the meeting was called to order at 8:40 by the President, Dr. A. G. Schulze.

There were fifty-six members and two guests present.

Minutes of the January meeting were read and approved.

Dr. John E. Hynes read the following Memorial to Dr. L. E. Daugherty.

## LOUIS E. DAUGHERTY (1880-1945)

Louis Eugene Daugherty was born at Duluth, Minnesota, on December 12, 1880. His primary education was obtained in Duluth. He was graduated from Shattuck in 1900, entered the Medical School of the University in the Fall of 1900; was graduated in 1904, and spent a year as intern in St. Luke's Hospital, Saint Paul. From 1905 to 1909 he was associated with Dr. C. W. More in Eveleth and then returned to St. Paul and was associated with Doctors MacLaren and Ritchie. Dr. Daugherty was keenly interested in surgery and had been for some years chief surgeon of the Omaha Railroad and on the surgical staffs of Ancker and St. Luke's Hospitals as well as holding staff positions at the University of Minnesota. He was a member of the Ramsey County Medical Society and the State and National Medical Associations, the Minnesota Academy of Medicine as well as the Association of Railway Surgeons. He was a member of the Delta Kappa Epsilon and Nu Sigma Nu Fraternities.

He was married to Miss Etta Francis in 1905 who survives him. To this union was born two sons, Louis, Jr., and Frank, both of whom are in the armed service of their country which prevented them from being home to aid in composing the weary body of their father in his last earthly resting place. No finer example of selfless sustaining devotion was ever manifested than that of his faithful wife during his last illness. Dr. Daugherty's outstanding character to those of us who knew him was his love of home and devotion to his family and his profession which he practiced with the utmost skill and integrity but without ostentation. He departed this life on January 10, 1945.

Ave atque Vale! Louis.

Signed: The Committee

CHAS. D. FREEMAN  
E. M. JONES  
JOHN E. HYNES  
\* \* \*

Dr. Carl B. Drake read the following Memorial to Dr. Herbert Davis.

## HERBERT DAVIS (1859-1944)

Dr. Herbert Davis, a practitioner in Saint Paul since 1888, became a member of the Minnesota Academy of

MAY, 1945

Medicine in 1898. His thesis, entitled "Injuries of Parturition Caused by Obstetric Forceps" was given on December 7, 1898.

Dr. Davis was born on a farm near Oshkosh, Wisconsin, April 14, 1859. To his mother, who was a lover of books, he attributed his decision to study medicine. After attending the Normal School at Oshkosh, he studied medicine at Rush Medical School and obtained his medical degree in 1880 at the age of twenty-one. Upon graduation he became company physician for the Jackson Mining Company at Nauganee, Michigan, and later was transferred first to Fayette, Michigan, and then to Two Harbors, Minnesota.

Dr. Davis came to Saint Paul in 1888 and opened an office on Selby Avenue. Soon he moved to the Moore Block at Seven Corners to share an office with Dr. Parks Ritchie. Upon construction of the Lowry Medical Arts Building he opened an office there, sharing offices at various times with Drs. Alexander Colvin, Paul Cook, Carl Teisberg, F. H. Neher, and John Abbott.

He had been an examiner for the Northwest Mutual Life Insurance Company of Milwaukee since 1899 and is said to have made some 12,000 examinations for that Company.

Dr. Davis was an ardent hunter and rarely missed a season until last fall. He could be found almost daily playing pool at the Minnesota Club and generally found time for a weekly game of poker.

Dr. Davis enjoyed a large family practice and his pleasing manner and good judgment endeared him to his patients. In spite of certain infirmities, he continued an active practice until the end, which came on November 16, 1944. He is survived by his widow, a daughter Marguerite, and a son Wallace, a veteran of World War I. One daughter, Lucile (Mrs. John M. Harrison) died in 1933.

The members of the Academy as well as the many friends of Dr. Davis will miss his genial presence.

Signed: The Committee

ERNEST M. HAMMES  
EDWARD V. GOLTZ  
CARL B. DRAKE

## CHRONIC SUBDURAL HEMATOMA

### Report of Five Cases

E. M. HAMMES, M.D.  
Saint Paul, Minnesota

Subdural hematoma, either acute or chronic, usually occurs secondary to head trauma. It was first described in 1857 by Virchow, who believed that hemorrhage into the subdural space was predicated by primary inflam-

From the Neuropsychiatric Department, Medical School, University of Minnesota.

## MINNESOTA ACADEMY OF MEDICINE

matory changes of the dura and that the hemorrhage was usually an expression of these inflammatory changes.

Bowen reviewed the literature in 1905 and stated that there was a causal relationship between trauma and

shell. In some of these no evidence of external injury was found. Along with the subdural hematoma, which was bilateral in about 50 per cent, widespread incidence of hemorrhage in the body cavities was observed in



Fig. 1.—Antero-posterior encephalogram showing marked displacement of entire ventricular system to the left due to a chronic (right) subdural hematoma.

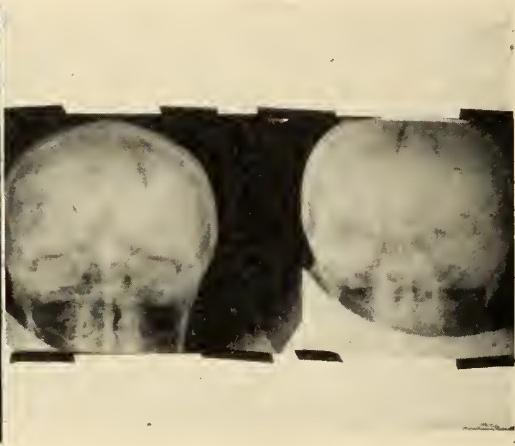


Fig. 2.—Postero-anterior encephalogram showing a large collection of gas in the subdural space between the arachnoid membrane and brain and the hematoma, pathognomonic of subdural hematoma.

subdural hematomas. In 1925 Putnam and Cushing not only called attention to the fact that most of these cases were traumatic in origin but that they could be successfully operated. Since then many excellent articles have appeared on this subject. Vance, in 512 fatal cases of head and brain injuries, found 132 subdural hematomas. In a recent article Browder observed 289 cases of subdural hematoma in a series of 18,272 cerebrocranial injuries. He came to the conclusion that an accurate diagnosis is seldom possible from the clinical features alone and that frequently associated intrinsic brain lesions produced confusing diagnostic signs.

Furthermore, definite cerebral localizing symptoms may not manifest themselves. These are probably two of the main reasons why so many cases still are unrecognized. In many instances of suspected cases, the physician delays, expecting localizing signs to develop. It is during this crucial prolonged period that serious compression of the cerebral cortex may occur, which often is irreparable in spite of successful surgery. The psychotic manifestations are usually of greater diagnostic significance and frequently occur before any organic neurological signs manifest themselves. They vary from slight personality changes and memory impairment to variable degrees of stupor to frank psychosis. Patients have been committed to mental hospitals and later on at postmortem a chronic subdural hematoma has been found.

In our present world war many similar cases will be reported secondary to head trauma of variable degree from flying fragments or blast injuries from high explosives. Abbott and his co-workers observed thirty-seven such cases, due to blasts from a nearby bomb or some cases. They also noted that the Rorschach test and the Shipley-Hartford Retreat Scale for measuring

intellectual impairment were a great aid in differentiating between subdural hematomas and the various types of war neurosis. In 80 per cent of their cases no evidence of a localized intracranial lesion could be found. Herman and his coworkers, in a study of fifty proven subdural hematomas, observed similar early psychiatric manifestations. Variable periods of confusion, dull and sluggish or irritable and uncooperative moods, along with some evidence of memory impairment were frequently noted.

The usual history obtained is that the patient had a slight or moderate trauma on the front or back of the head, the direction of the force being antero-posterior or postero-anterior. A sudden force in this direction may produce sufficient movement between the brain and the dura to rupture some of the dural veins, with subsequent subdural bleeding. The patient may be momentarily dazed or unconscious, usually the former. He recovers and remains well for days to months, then develops a gradually increasing headache, varying periods of drowsiness, with other psychotic manifestations previously mentioned. Nausea and vomiting may occur and is usually present with the more severe attacks of headaches. Inequality of the pupils frequently mentioned as a localizing sign has been rarely observed in our cases. Organic signs such as reflex changes, aphasia, mono or hemiplegia, can occur but usually during the later period. Jacksonian or generalized convulsions have been noted rarely. Slight edema or some venous engorgement may be found on examination of the fundi. Careful and frequent record of the pulse rate, temperature and blood pressure should be kept, as in all head injury cases, but usually are of no diagnostic import. Lumbar puncture may reveal a normal or xanthochromic spinal fluid with a slight increase in pressure and a moderate increase in the protein.

Roentgenological studies are of great diagnostic value. An encephalogram or ventriculogram may show a marked displacement of the ventricular system away from the side of the hematoma. Occasionally one finds a collection of air in the subdural space between the

brought to the Ancker Hospital the following day. No further history could be obtained.

On admission to the hospital he was lethargic and semicomatose. The examination was negative throughout. His temperature was 99 degrees F., pulse 82. A spinal puncture revealed a clear xanthochromic fluid

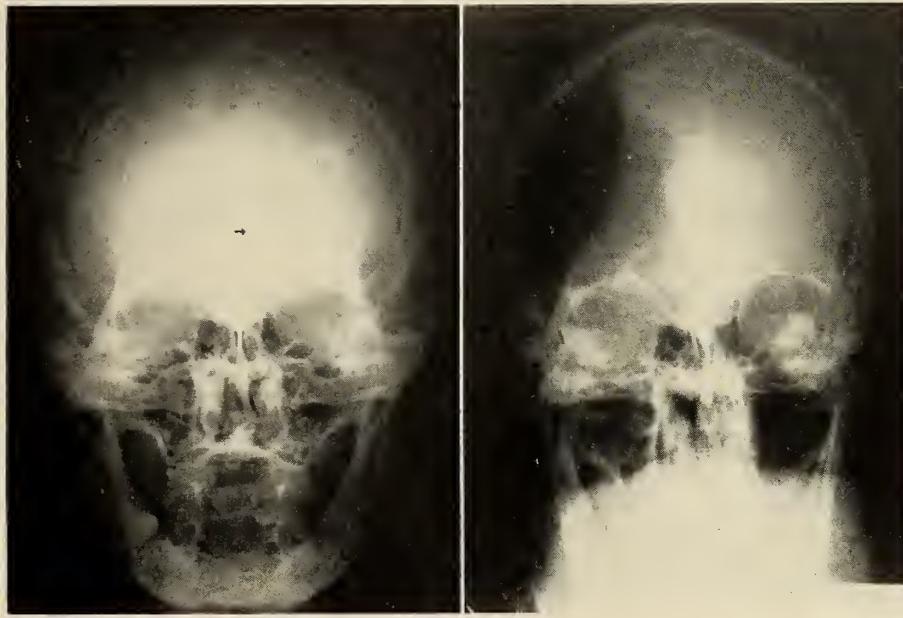


Fig. 3.—Case 2. Lateral shift to right and downward displacement of calcified pineal gland due to a left chronic subdural hematoma.

Fig. 4.—Case 2. Roentgenogram, showing collapsed cerebrum, after removal of large subdural hematoma, the resulting cavity filled with air.

arachnoid membrane and brain and the hematoma. This latter finding is pathognomonic of subdural hematoma. Occasionally the calcified pineal gland is displaced either posteriorly or downward, or laterally.

The surgical procedure best suited to most cases is multiple trephine openings, with emptying of the cyst and thorough irrigation. The great majority of these hematomata are located on the lateral aspect of the fronto-parietal region. Unless definite organic signs indicate some other region, this area is the one usually selected for trephining. Frequently subdural hematomas are bilateral and for that reason it is advisable to always investigate both sides of the skull. The prognosis for ultimate recovery is excellent, provided the diagnosis is made sufficiently early.

#### Case Reports

**Case 1.**—A man, aged sixty-seven, was brought to the outpatient department of the Ancker Hospital by the police car, at 5:00 A.M., December 31, 1944. He had been hit by an automobile, knocked down but not rendered unconscious. He had a strong odor of alcohol on his breath, his left ear was edematous, he had an abrasion over the left frontal area, ecchymosis of the left eye and a superficial laceration in the left forehead. He had no other complaints. Some metaphen and a dressing were placed over the laceration. He was taken to the Public Safety Building and the police discharged him on that day. Two weeks later, on January 13, 1945, he was readmitted to the Ancker Hospital. He had been working regularly on a farm until the day previous, January 12, 1945. He then appeared confused and was

under pressure of 300 mm. water. The fluid was normal except for an increase of protein, 59 mg. per 100 c.c. I saw him the following morning. He was stuporous but could be aroused readily and would lapse again into a stuporous state within a few minutes. While conscious he answered questions and carried out simple orders correctly. He had a marked peripheral arteriosclerosis. His cranial nerves and fundi were normal. Upper extremities were negative and he could execute all movements in the lower extremities; both knee and ankle jerks were absent. No pathologic reflexes were elicited. His neck was somewhat rigid. He gradually became more stuporous and had involuntary stools and urine. Another spinal puncture, on January 15, 1945, revealed similar findings as before. That evening he was given 100 c.c. of 50 per cent glucose intravenously, without any improvement. X-rays of the skull and chest were negative. Blood count, blood Wassermann, urine and blood sugar were normal except for a leukocytosis of 21,850. He was transferred to the University Hospital on January 18, 1945, where Dr. William Peyton removed a subdural hematoma over the left middle cerebral region, containing 3 ounces of hemorrhagic fluid. The patient is making satisfactory progress. During his stay at the Ancker Hospital his temperature varied between 99 and 102, pulse between 60 and 100; blood pressure systolic between 120 and 170 and diastolic between 60 and 80.

**Case 2.**—A patient under the care of Dr. W. A. Carley, a man, aged fifty-two, with negative personal history except for diabetes since 1935, was struck in the face with a fist by a soldier, on September 16, 1944. He was not knocked down or rendered unconscious. He sustained a slight bruise on his left cheek. He remained well for five weeks. He then was seen by Dr. W. A. Carley, who found him clear mentally, but dull and sluggish and he answered questions slowly. The

neurological examination was negative. He was taken to the Miller Hospital. A spinal puncture revealed clear fluid, under normal pressure. It contained one cell, a negative Wassermann, negative colloidal gold, quantitative protein 30 mg. per 100 c.c., sugar 165 mg. (The sugar increase was evidently due to his diabetes). The following day he became confused, disoriented and restless. He gradually became more stuporous and on the fifth day, 6 weeks after the accident, developed a right hemiparesis, with deep reflexes increased and a positive right Babinski. X-ray of the skull was negative. All laboratory findings were negative except for sugar in the urine. A diagnosis of a subdural hematoma was made. He was transferred to the University Hospital, where Dr. William Peyton evacuated a large subdural hematoma over the left cerebrum. The patient made a satisfactory recovery.

*Case 3.*—A man, aged fifty-nine, was referred to us by Dr. L. F. Woodworth, Le Center, Minnesota. His family and personal history were unimportant except that he had been a heavy periodic alcoholic for years. On May 6, while intoxicated, he had a quarrel with a young man and received a severe blow on the left eye. He was knocked down, was somewhat dazed but not unconscious. His son drove him home and he was able to walk into the house. He did not know he was at home and believed he was still down town. He slept well that night. The next noon he asked his wife what happened to his eye. On the third day following the blow he did all his work on the farm, although he appeared somewhat sullen. He continued with his daily routine without any complaints, except that he was sullen, irritable and inconsiderate. About four weeks later he stated that his tongue felt thick and stiff for about five minutes. This recurred twice during the following ten days. About this time he had a short period when "he would go into a stare." This subsided when he was spoken to. He had three similar attacks during the following week.

On June 18 he and his nephew drove a distance of 500 miles to visit his mother. The patient drove the car; he would suddenly slow down to fifteen miles an hour and seemed to be thinking of something. He gradually would come out of the spell and then speed the car up to eighty miles an hour. After this had occurred on three different occasions, the nephew drove the car the remainder of the way. The patient did not manifest any further interest during the trip. After he remained at his mother's home the periods of staring became more frequent. On July 4, two months after his injury, he developed a right hemiparesis, was semistuporous and had involuntary urination. Because he had a hypertension a diagnosis of apoplexy was made. He continued in this condition, with variable periods of improvement. He was admitted to St. Joseph's Hospital on July 25. A neurological examination was negative except for an aphasia and a hemiparesis of the right arm and leg. The fundi were normal. Blood pressure was systolic 155; diastolic 70. Blood studies, urine and blood Wassermann were normal. X-ray of the skull was normal throughout. A spinal puncture revealed clear fluid, pressure 14 mm. Hg., no bloc, three cells, negative Wassermann, negative colloidal gold curve, quantitative protein 34 mg. per 100 c.c. A diagnosis of a left subdural hematoma was made and the patient was to be operated on the next morning. During the night he had a chill, his temperature rose to 103 degrees F. and he died the following day. The postmortem findings were essentially negative except for a broncho-pneumonia. A large well-organized subdural hematoma was found over the left cerebrum, with marked compression of the left frontal, parietal and occipital lobes.

The following two cases are reported to emphasize some of the differential diagnostic problems encountered in dealing with subdural hematomas.

*Case 1.*—A man, aged forty-nine, referred to us by Dr. V. M. Griffen of Grand Forks, North Dakota, was in a runaway accident. The whipple-tree of his wagon struck a tree, he was thrown forward and sustained a slight bruise on his left forehead. He drove home, worked on the farm the following three days, but had a dull headache. Because of a pain in his right foot, he consulted his family physician, who found a fracture of the right great toe. He had no other complaints. On the tenth day after the accident he developed weakness in his right leg and his headache was more pronounced. Within twenty-four hours his right arm became similarly involved. On the twelfth day he had a generalized convulsion and his right arm and leg became flaccid. He was admitted to the hospital. He was somewhat stuporous. A spinal puncture revealed clear fluid under somewhat increased pressure but normal throughout. 100 c.c. of a 50 per cent glucose was administered intravenously. There was no improvement in his condition.

Examination the following day revealed that the patient was conscious, somewhat sluggish mentally and slightly aphasic. All cranial nerves were normal except for bilateral choked discs of two diopters. The right arm was completely paralyzed and flaccid. All deep reflexes were absent. The left arm was normal. The right abdominal reflexes were absent, left normal. The right lower extremity was flaccid, but patient could execute some movements. Knee and ankle-jerks were absent, no ankle-clonus. Babinski was negative. Sensation was normal as far as could be determined. The neck was not rigid and the Kering sign was negative. All laboratory findings were normal. Blood pressure 145 systolic; 70 diastolic; temperature 99.6 F., pulse 70. A diagnosis of a subdural hematoma over the left parietal region was made.

A large bony flap was removed over this region. The dura was tense but of normal color. It was incised; there was no escape of hemorrhagic fluid or a gush of cerebrospinal fluid as occurs in a subdural hydroma. The brain was markedly edematous and did not pulsate. A deep-seated hematoma was suspected, a small trochar was inserted but no fluid escaped; no resistance was noted as in a tumor mass. Several small trephine openings were made on the opposite side but the dura and brain appeared normal. The patient made satisfactory progress and an uneventful recovery in two weeks. Evidently this was a case of a localized malignant cerebral edema, which responded favorably to a simple decompression operation.

*Case 2.*—A woman, aged twenty-seven, was admitted to the Ancker Hospital on December 28, 1944. Her family history was negative. Her personal history revealed that she sustained a fall in 1935, was unconscious for a few minutes and recovered without any sequelae; that she had an appendectomy and tonsilectomy in 1937. She had three living children and passed through her pregnancies without any complications. She has always been a highly nervous and emotional person, with considerable marital difficulties. In July, 1944, following a prolonged quarrel with her husband, she suddenly became blind but recovered completely within twelve hours. Four months ago she was informed that her husband had syphilis. Since then her worries have been more pronounced and she has been more emotional. She is right handed.

On December 14, 1944, while hanging curtains, she slipped from a chair and fell into the window, breaking the pane. She struck the top of her head against the storm window, but did not break it. She fell to the floor and was somewhat dazed. Soon afterward she got up and finished hanging the curtain. Three days later she began to have occipital headaches. These occurred at irregular intervals and gradually increased in frequency and severity and have been almost constant since December 24. On the evening of December 26 the headache was very intense; she had a stiff neck and her right arm felt peculiar and painful. The following morning, De-

cember 27, her right arm felt weak and she dropped various articles while preparing breakfast. She returned to bed, fell asleep, awakened at 8:30 A.M., got up, took a few steps and supposedly fainted. She was aroused by the shouting of her children at 10:00 A.M. Her condition continued unchanged and during that night she awakened and had difficulty in moving her right arm and right leg. She was not aphasic.

Upon admission to the Ancker Hospital the following morning, she was conscious, appeared slightly drowsy, kept her eyes closed because of photophobia. Pupils, fundi, eye movements, movements of face and tongue were normal. Her speech was normal. The left upper extremity was normal. The right upper extremity showed a moderate weakness of the entire musculature; the deep reflexes were normal, Hoffman negative; the finger to nose test was performed in an awkward manner. The abdominal reflexes were absent because of flabby musculature. The left lower extremity was normal. The right showed a moderate weakness, normal knee and ankle-jerks, no clonus, no pathologic reflexes, no ataxia. Sensation was normal throughout. There was no neck rigidity. Her temperature was 98; pulse 65. Hemoglobin 76 per cent; leukocytes 6800; urine normal; blood pressure 120 systolic; 70 diastolic; blood Wassermann negative. Spinal fluid clear, pressure 130 mm. water, no bloc, 3 cells, Wassermann negative, colloidal gold curve negative, quantitative protein 29 mg. per 100 c.c. Another spinal fluid examination of January 3, 1945, gave similar findings. X-ray of skull was negative. A diagnosis of a left subdural hematoma suspect was made. In the absence of any speech disturbance and with normal reflexes, and because of the previous history of hysterical amblyopia, further observation was suggested. By January 1, 1945, her hemiparesis had disappeared, her headache improved but she continued to be unduly worried about her condition. She was discharged on January 10, 1945. She came to the outpatient department on January 23, still complaining of left occipital headache, blurred vision and tingling sensation of the entire right side. Examination was negative throughout. She gradually improved and no further symptoms developed.

### Conclusions

1. Three cases of subdural hematoma, one case of malignant cerebral edema and one of major hysteria simulating subdural hematoma are reported.

2. Attention is directed to the early psychotic manifestations and the late localizing signs as a frequent manifestation in this disease.

### References

- Abbott, W. D., Floyd, O. D., and Nosik, W. A.: Subdural hematoma and effusion as a result of blast injuries. *Bull. Am. Coll. Surg.*, 2:123, 1943.
- Abbott, W. D., Floyd, O. D., and Nosik, W. A.: Psychiatric diagnosis of subdural hematoma and effusion from blast. *J. Am. Psych.*, 100:98, 1943.
- Bowen, W. H.: Traumatic subdural hemorrhage. *Guy's Hospital Rep.*, 59:21, 1905.
- Browder, J.: A résumé of the principal diagnostic features of subdural hematoma. *Bull. N. Y. Acad. Med.*, 19:168, 1943.
- Hammes, E. M.: Delayed traumatic intracranial hemorrhage. *Minnesota Med.*, 12:86-90, 1929.
- Herman, M., London J., and Wortis, S. B.: Mental changes in patients with subdural hematoma. *J.A.M.A.*, 125:113, 1944.
- Putnam, T. J., and Cushing, H.: Chronic subdural hematoma. *Arch. Surg.*, 11:329, 1925.
- Vance, B. M.: Fractures of the skull. *Arch. Surg.*, 14:1023, 1927.

### Discussion

DR. WM. T. PEYTON, U. of M. (by invitation): To demonstrate the difficulty in making a definite diagnosis of subdural hematoma and to illustrate our attitude towards making trephine openings for suspected subdural hematoma, I tell you that in case I of Dr. Hammes' report I was inclined to doubt the diagnosis of subdural

hematoma, yet, because Dr. Colvin and Dr. Hammes had sent him in with this diagnosis, we made trephine openings and evacuated a subdural hematoma.

When there is a possibility of subdural hematoma we make trephine openings believing that it is better to trephine many negative cases than to overlook one with a hematoma. If no hematoma is found, no harm has been done by making these trephine openings under local anesthesia. In the case of the fresh postmortem specimen of the subdural hematoma that is being passed around among you, the patient's life would have been saved had this attitude toward trephining for subdural hematoma been adopted by the clinicians in charge. They did suspect a subdural hematoma but were deterred from operation because, on making a spinal puncture, the pressure was found to be normal and no blood was found in the spinal fluid.

The spinal fluid pressure and the intracranial pressure fluctuate together only when the cerebrospinal fluid in the cranial cavity is in direct communication with that in the spinal canal. Therefore, with an obstruction such as that which may result from herniation of the gyrus hippocampus through the tentorial notch or herniation of the cerebellum into the foramen magnum, normal spinal fluid pressure may be recorded, in the presence of increased intracranial pressure.

Blood is present in the spinal fluid in the presence of subdural hematoma only if there is associated laceration of the brain to produce subarachnoid hemorrhage, or if there is a tear through the arachnoid and into the hematoma.

A dilated pupil on the side of the lesion and bilateral neurological findings in a unilateral subdural hematoma (they are, however, frequently bilateral) can result from herniation of the gyrus hippocampus on the side of the lesion through the tentorial notch. Increased intracranial pressure forces the gyrus hippocampus through the tentorial opening at the side of the brain stem. As it is forced through this opening the third nerve comes into contact with the upper surface of the gyrus and as the herniation continues it presses on the third nerve, so that at postmortem a notch may be found on the upper surface of the herniated gyrus where the third nerve was pressed into it. When the third nerve is thus pressed upon, the function of the fibers to the iris are first affected. A dilated pupil is the best sign of the side of the lesion.

In large subdural hematomas there is extensive shift of the cerebral tissues and brain stem to the opposite side. This tends to push the cerebral peduncle of the side opposite to the hematoma against the edge of the tentorium and herniation of the gyrus hippocampus on the side of the lesion increases this crowding of the opposite cerebral peduncle against the edge of the tentorium, until eventually the function of its fibers are impaired. Then, with the cortex on the side of the lesion compressed to impair its function and the opposite peduncle notched by the tentorium, it is obvious that bilateral pyramidal tract signs may appear.

Dr. Hammes did not touch upon the controversial matter of the pathogenesis of so-called subdural hematoma. Recently some investigators have maintained that these hemorrhages are intradural hemorrhages and not subdural. This would account for the inner limiting membrane which is always found even in early cases. The inner membrane, if the hemorrhage is intradural, is of course the inner layer of the dura. It has never been adequately explained how such a membrane could form so quickly by proliferation. A progressive chronic hematoma, which followed the course of a clinical subdural hematoma, has never been produced experimentally, although many attempts have been made to produce lesions by subdural injection of blood.

I have injected intradural blood in dogs. It is difficult to do this in dogs because the dura is very thin, but, by inserting the needle through the superior sagittal sinus where blood was withdrawn into the syringe and then advancing the needle across the sinus into the

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dura at the edge of the sinus, a few small hemorrhages which were microscopically similar to clinical subdural hemorrhages were produced, but they did not enlarge and progress as do clinical subdural hemorrhages.

It has only recently been realized how frequently subdural hematoma occurs in children, but now, since the pediatricians are becoming familiar with the manifestations of this condition, we are seeing many cases in infants.

The most common symptoms in infants are convulsions, irritability, and vomiting. There may be paralysis or coma, but often the symptoms are not at all suggestive of the lesion. The child may just fail to gain weight and have a fever with repeated infections. This diagnosis can then only be established or ruled out by puncture and aspiration of the subdural spaces through the open fontanelle in its lateral angles.

In adults, trephining and aspiration of a liquid hematoma is usually followed by recovery. Only rarely has it been necessary in my experience to turn a bone flap and remove blood clots.

In infants, the treatment is quite different. They should have repeated aspirations for ten days to two weeks, and then trephine openings are made to determine whether or not a membrane is present. If a membrane is present, it must be removed in order to allow expansion of the cerebrum. It is very important that a membrane is not allowed to remain in the early postnatal period when the compressed cerebrum needs room, not only for recovery from compression but also for growth.

DR. A. R. COLVIN, Saint Paul: At the Ancker Hospital head injuries are assigned jointly to the Neurological and Surgical services, and, after consultation, when time permits, a diagnosis where one is possible is arrived at.

The differential diagnosis in acute head injuries is not easily made. The first case reported by Dr. Hammes and discussed by Dr. Peyton furnishes evidence of the difficulty in diagnosis. When seen by Dr. Hammes in consultation, his notation on the chart was "probably subdural hemorrhage." Dr. Peyton, to whom the case was referred for operation, tells me he was in serious doubt. Exploratory operation by Dr. Peyton revealed subdural hemorrhage. Hanke, in a comprehensive review of the literature on subdural hemorrhage, says that in 50 per cent of his own cases the diagnosis was correct and that in the other 50 per cent the diagnosis was either wrong or was not made.

Concussion, contusion, laceration of the brain, epidural or subdural hemorrhage or a combination of two or more of them have to be considered. The lesions are liable to be multiple and many of the symptoms may be equally referable to either one of their number. The manifestations of a circumscribed lesion are often lost in those of a diffuse character and similar results constantly ensue from different causes. The seemingly more destructive lesions may not have as serious consequences as an apparently less destructive one. The effect of the sum of numerous small lesions may be more disastrous than one large lesion.

Evidence of the relative meaning of acute and chronic as applied to intracranial hemorrhage is furnished by Henschel's 163 cases of subdural hemorrhage, in which the latent interval ranged from one day to ten months and Custodi's 64 cases of epidural hemorrhage in which the latent interval ranged from one hour to six days, so that on occasion, epidural may be difficult to differentiate from subdural. Subdural occurs four times as often as epidural. Epidural, perhaps, rarely presents the classical clinical picture of the textbooks. Phelps made the statement that for anybody dying within six hours after the injury nothing could have been done to save him. A recent case has somewhat disturbed by, perhaps, too rigid adherence to this dictum.

A man admitted to the Ancker Hospital about 12:30 p.m. told a brief history of his injury which occurred about one-half hour before this time. He was taken to the ward and very shortly thereafter became unconscious. Through some failure in reciting his history to me, I was led to believe that he had not been conscious after the injury. He died unoperated upon about 6:30 p.m. The autopsy revealed a large epidural hemorrhage and a contracoup contusion of the temperosphenoidal lobe. It was, of course, impossible to say what part the contusion played in the lethal ending. He had a clot of about 100 c.c. Kocher has said that 60 c.c. cause symptoms and 120 to 180 c.c. cause death.

This case emphasizes again the necessity and importance of continued and close observation by all having to do with head injuries on admission to the hospital, and the necessity also for impressing upon nurses and interns the importance of transmitting to the staff surgeon each step in the patient's progress.

In acute head injuries a provisional diagnosis is often left to time to confirm or disprove.

It is evident also that in the treatment of acute head injuries the trend is toward conservatism, i.e., there are comparatively few acute head injuries that should be operated upon. While subdural hemorrhage commonly presents a chronic problem, nevertheless, it may be part of an acute injury. Even then, however, it may become chronic. This is due to the fact that, as a rule, the hemorrhage is due to tears of the pial vessels or the cerebral vessels emptying into the longitudinal sinus and is frequently caused by a relatively mild trauma. The venous origin may also account for the slowness of the development of symptoms. This is also explained in part by the fact that in subdural hemorrhage as much as 130 c.c. may be symptomless.

Another cause for subdural or combined subdural and epidural hemorrhage is injury to a dural sinus. A recent patient at the Ancker Hospital was operated upon for a fracture of the skull. A small fragment depressed at almost a right angle was found at operation to have perforated the longitudinal sinus, and, plugging the opening, its removal was followed by profuse hemorrhage, controlled by gauze packing. This was left in place for a week. At this time attempted removal was followed by severe hemorrhage. Repacking, which was removed in another week, was curative. A tear at the edge of the sinus might easily have caused both sub- and epidural hemorrhage.

While in acute brain injuries conservatism is the rule, except for epidural hemorrhage, chronic subdural hemorrhage usually requires operative treatment.

In no other form of brain pathology are there found so bizarre, changeable clinical pictures as in subdural hemorrhage, both acute and chronic. Abbott speaks of a veritable hodge-podge of symptoms. As a consequence, it has been advised that in any case of unclear chronic illness with cerebral symptoms, it is wise to think of subdural hemorrhage, and, because of this irregular picture, in case of doubt, single or multiple trephine openings are justifiable; the more so that it is easily and safely done. But even if this be done, in case of doubt, the expert neurosurgeon, who is competent to follow through, should do the exploration when one is available. Brain tumor and abscess are, perhaps, the most common conditions causing confusion.

---

On account of the lateness of the hour, it was decided that Dr. Bell's paper on Primary Hypertension be postponed to a later meeting.

The meeting adjourned.

J. A. LEPAK, M.D., *Secretary*

MINNESOTA MEDICINE



"**S**INCE many of the conditions obtaining among troops during war time are simultaneously factors which predispose to the endemic and epidemic spread of . . . amebic dysentery among military personnel and civilians . . . these diseases assume great significance . . . not only to the medical departments of the armed forces but to the civilian physician as well." —Lt. Com. W. L. Voegelin, USNR: N.W. Med., 43:69 (1944)



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\*Silverman, D. N.; Amer. J. Digest. Dis. & Nut., 4:281-282 (July) 1937.



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## REPORTS and ANNOUNCEMENTS

### MEDICAL BROADCAST FOR MAY

The following radio schedule of talks on medical and dental subjects by William O'Brien, M.D., Director of Postgraduate Medical Education, University of Minnesota, is sponsored by the Minnesota State Medical Association, the Minnesota State Dental Association, the Minnesota Hospital Association and the University of Minnesota School of the Air.

Common Cold	May 2—11:00 A.M.—WLB
*Child Health	May 5—9:15 A.M.—WCCO
Medicine in the News	May 5—11:30 A.M.—WLB-KROC
Rheumatic Fever	May 9—11:00 A.M.—WLB
*Preschool Examinations	May 12—9:15 A.M.—WCCO
Medicine in the News	May 12—11:30 A.M.—WLB-KROC
Faulty Vision	May 16—11:00 A.M.—WLB
*Mental Hygiene for Children	May 19—9:15 A.M.—WCCO
Medicine in the News	May 19—11:30 A.M.—WLB-KROC
Faulty Hearing	May 23—11:00 A.M.—WLB
*Care of Children's Teeth	May 26—9:15 A.M.—WCCO
Medicine in the News	May 26—11:30 A.M.—WLB-KROC
Your Hospital in Wartime	May 28—4:45 P.M.—WCCO
Glands of Internal Secretion	May 30—11:00 A.M.—WLB

\*\*Keyed with subject of the month—Minnesota State Medical Association Packet of Information for Members.

### HOUSE OF DELEGATES, MSMA

There will be no scientific meeting of the Minnesota State Medical Association this year. The House of Delegates, however, will meet Saturday and Sunday, May 19 and 20, in Saint Paul with headquarters at the Saint Paul Hotel.

Business sessions will be held in the headquarters of the Ramsey County Medical Society on the 15th floor of the Lowry Medical Arts Building on Saturday with election of officers scheduled for Sunday.

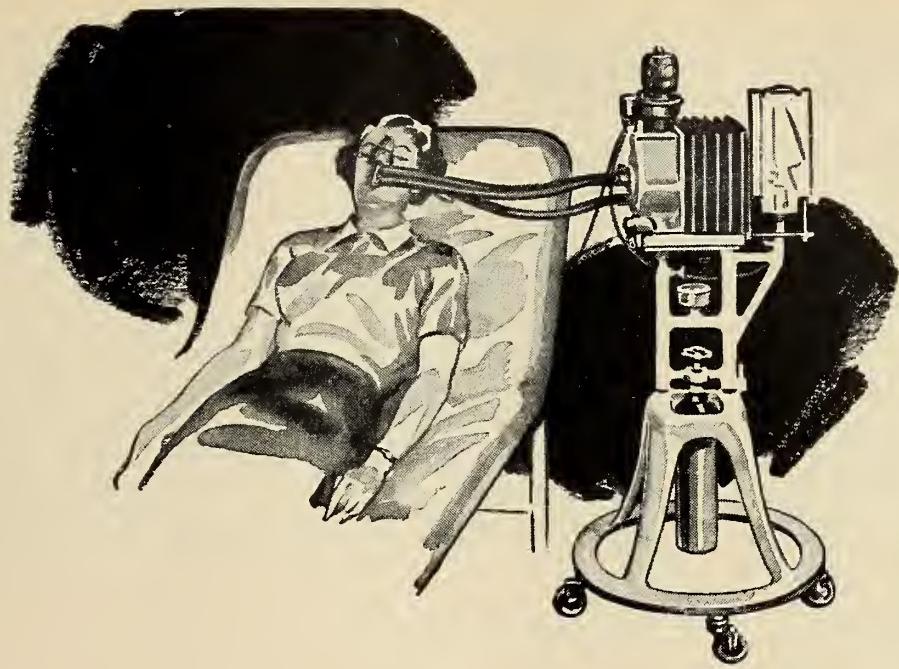
The annual banquet will be held Saturday evening at the Saint Paul Hotel, with President Edward L. Tuohy of Duluth and Lt. Emmet L. Manson, D.D.S., of Worthington, as speakers.

### HOUSE OF DELEGATES, AMA

The meeting of the American Medical Association House of Delegates scheduled for May is being postponed to a later date. Announcement of the specific date will be made later.

### WASHINGTON COUNTY SOCIETY

The regular monthly meeting of the Washington County Medical Society was held April 10, 1945, at Stillwater, with a good attendance. Dr. Harvey Nelson of Minneapolis was the guest speaker. His subject was "Injuries to Tendons, Nerves and Bones of the Upper Extremities," illustrated by radiographs showing lesions and results of treatment. Dr. Nelson also showed drawings to further elucidate and explain corrective procedures. He answered many questions following presentation of his talk. The discussion proved both interesting and instructive.



## In Hyperthyreosis, too

The symptom complex of increased appetite, exaggerated psychomotor tension, hyperhidrosis, and loss of weight, in addition to spelling thyrotoxicosis, also reflects the intense metabolic activity characteristic of this condition. Utilization of nutrients may be 50 per cent above normal.

Whether therapy be conservative or surgical, metabolic deficits must be eradicated and some of the consumed body tissue restored. To this end the intake of virtually all essential nutrients must

be doubled. If surgery is contemplated, nutritional preparation ranks in importance with iodine preparation for a successful outcome.

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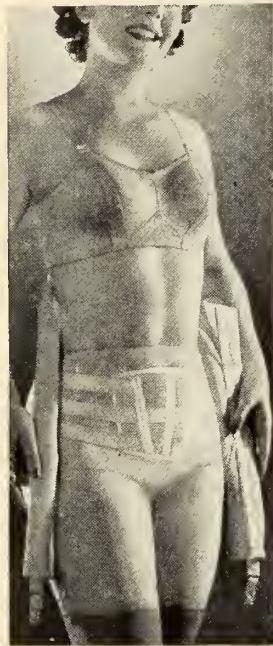
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## WOMAN'S AUXILIARY

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Duluth, Minnesota

MRS. ROYAL V. SHERMAN, Editor

Red Wing, Minnesota

### STATE BOARD

The annual meeting of the Woman's Auxiliary to the Minnesota State Medical Association will be held in Saint Paul at the Saint Paul Hotel, May 17 and 18. On the afternoon of May 17 a tea will be held, and on May 18 the Annual Luncheon and presentation of the president's pin to Mrs. E. V. Goltz, the incoming president. Dr. W. A. O'Brien will be the speaker at the luncheon.

Due to the ruling of the ODT which prohibits more than fifty out-of-town people from attending, the meeting is open only to Board members and county presidents.

### GOODHUE COUNTY

Mrs. T. M. Olsen, State Commander of the Minnesota Cancer Society, Inc., an affiliate of the Cancer Society and Field Army, met with the members of the Goodhue County Medical Auxiliary and chairwomen from various towns in the county at the St. James Hotel in Red Wing, April 13.

Mrs. Olsen outlined the historical background of the American Society, its aims and methods, and the goal of the Minnesota Cancer Society.

Plans were made for the raising of funds throughout Goodhue County and Red Wing. Members of the Goodhue County Medical Auxiliary who will serve as a committee are Mrs. W. W. Liffrig, Mrs. George Kimmel, Mrs. James Brusegard, Mrs. R. V. Sherman and Mrs. R. F. Hedin of Red Wing, and Mrs. E. A. Olson, Pine Island, District Commander of the Minnesota Cancer Society.

The regular meeting of the Goodhue County Medical Auxiliary was held April 18 at the home of Mrs. R. F. Hedin.

### HENNEPIN COUNTY

On April 2, the Medical Auxiliary held its annual philanthropic benefit and musical tea. The benefit bridge was held in the Medical Lounge, and the musical tea at the home of Mrs. Richard R. Cranmer. Proceeds from the benefit are to be used for the furnishing of a room at Sarahurst, a home maintained for discharged tuberculosis patients during the period of rehabilitation, and to provide generous contributions to such worthy causes as the American Red Cross, Cancer Control, and the Society for the Blind. Another project of the Auxiliary is the maintenance of a Student Loan Fund at the University of Minnesota, from which medical students are able to secure funds to carry on the study of medicine.

(Continued on Page 412)



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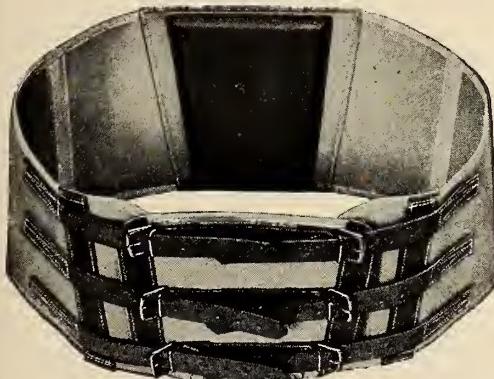
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(Continued from Page 410)

### MOWER COUNTY

The Woman's Auxiliary to the Mower County Medical Society was entertained March 26 at the home of Mrs. P. A. Lommen, Austin, Minnesota.

Mrs. C. C. Allen, president, was in charge, as Mrs. W. B. Grise reported on the recent co-ordinating council meeting held in Austin. Members reported the number of hours spent in Red Cross work and a motion was made to contribute to the Cancer Control Movement.

Facts on arthritis from *Hygeia* were presented by Mrs. Lommen. Following the meeting a social hour was held.

### NICOLLET-LE SUEUR

The Nicollet-Le Sueur County Medical Society and Auxiliary held a joint meeting in March.

Mrs. Lawrence Sjostrom of St. Peter, presided at the Auxiliary meeting. Mrs. Hobart Johnson was in charge of a Cancer Control program which was presented. April has been designated cancer control month throughout the nation, and funds are to be raised for this work. Complete co-operation of the Nicollet-Le Sueur auxiliary was pledged. Mrs. Johnson attended a cancer control course which was held recently at the University of Minnesota.

Several vocal solos were sung by Mrs. Victor Bernhardson. Following the meeting refreshments were served at the home of Dr. and Mrs. C. F. Wohlrbabe.

### ANTI-BLEEDING MATERIAL

A new anti-bleeding material which may be useful in shock, in hemophilia and to stop bleeding during surgical operations is announced by Dr. Alfred Lewin Copley, of the University of Virginia School of Medicine (*Science*, April 27).

Before it can be tried in patients with hemophilia, the hereditary bleeders' disease, "extensive studies will have to be conducted," Dr. Copley states.

In the test tube, a small amount of the material rapidly clots hemophilic blood. It also almost instantly stops bleeding from cut surfaces, it was found during operations on animals.

This anti-bleeding material was obtained from blood plasma and also from human placentas. A single placenta yields a large amount of the anti-bleeding substance. The latter is called thromboplastin because it acts, along with calcium, on the prothrombin of the blood to convert it into thrombin. It is thrombin which converts fibrinogen into fibrin to form the clot when blood is shed.

The possible anti-shock usefulness of the anti-bleeding material was discovered when it was used successfully to treat six dogs suffering from peptone shock. This suggests that it may be useful in treating anaphylactic shock, the kind that sometimes comes following injections of horse serum containing vaccines. In this part of the study the thromboplastic substance was used in the form of a protein compound although a protein-free material was also obtained.

Other scientists have previously reported extracts from human placentas with some degree of anti-bleeding material and a more active substance was also obtained from pig's lungs.—*Science News Letter*, May 5, 1945.

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## ◆ Of General Interest ◆

Dr. T. O. Wellner has closed his practice in Rochester and has left the city.

\* \* \*

Dr. J. L. Bollman, Mayo Clinic, attended the conference on liver injury held at the Macy Foundation in New York City.

\* \* \*

Dr. Wilfred McKechnie has taken over Dr. J. C. Poore's practice at Isle. Dr. Poore was recently inducted into the U. S. Navy.

\* \* \*

There is a critical shortage of x-ray films occasioned by increased army and navy demands. Physicians are urged to economize in the use of films.

\* \* \*

Dr. Charles Sheard, Mayo Clinic, has been elected a member of the Board of Directors of the National Society for the Prevention of Blindness.

\* \* \*

Dr. T. E. Broadie, Ancker Hospital, Saint Paul, has been made a member of the National Committee for the Consideration of the Care of the Chronic Ill.

\* \* \*

"Recent Developments in Anesthesia" was the subject of a recent address given by Dr. John S. Lundy, Mayo Clinic, at the Percy Jones General Hospital at Battle Creek, Michigan.

\* \* \*

A citation for outstanding work in the Belgian Drive has been conferred on Captain John L. Stennes, Minneapolis. Captain Stennes, a medical officer in the paratroopers, has been in overseas service for eight months.

\* \* \*

Dr. Paul Arthur O'Leary, Mayo Clinic, addressed the Wartime Graduate Medical Meeting, held at Des Moines, Iowa, on April 11. His subject was "Common Dermatologic Problems." Dr. O'Leary also took part in a round-table question and answer period.

\* \* \*

Dr. L. A. Brunsting, Mayo Clinic, was a guest speaker at the Southern Forum of Allergy in New Orleans on April 2. During the same week, Dr. Brunsting gave the annual Le Roy Long Lecture at the School of Medicine, Oklahoma University, Oklahoma City.

\* \* \*

Dr. H. J. Moersch, Mayo Clinic, presented papers on "The Use of the Esophagoscope in the Diagnosis of Esophageal Disease," and "Bronchoscopy in the Diagnosis of Bronchial Disease" at the Wartime Graduate Medical Meeting held at Fort Snelling on April 10.

Dr. L. W. Johnsrud of Hibbing has been made a licentiate of the American Board of Surgery. Dr. Johnsrud took part of the competitive examinations required for appointment last fall in Rochester and completed them in Chicago in the early spring.

\* \* \*

Dr. Roger L. Kennedy, Mayo Clinic, discussed the program of the Committee on Child Health of the Minnesota Medical Association at the April meeting of the medical societies of Wabasha and Winona Counties.

\* \* \*

Dr. Kenneth Kelly, who completed his internship at the Swedish Hospital in Minneapolis during the spring, is now in private practice in Grove City. The marriage of Dr. Kelly to Miss Viola Carter, of Ada, Minnesota, was an event of April 2, 1945.

\* \* \*

In recognition of his outstanding contribution to the work of Aeronautics, Colonel W. Randolph Lovelace, II, Mayo Clinic, has been elected a Fellow of the Institute of Aeronautical Sciences. This is an honor attainable only through unusually valuable work in this field of medicine.

\* \* \*

After almost two years' absence in military service, Dr. D. W. Pollard resumed his duties as superintendent of the Minneapolis General Hospital on April 1. Dr. Pollard, a major in the Army Medical Corps, served at Kennedy General Hospital in Memphis, Tennessee, and other hospitals throughout the South.

\* \* \*

Congratulations for a half century of service were presented to Drs. W. F. Wilson and W. J. Cochrane, both of Lake City. Dr. Wilson is now in his fiftieth year as secretary of the Wabasha County Medical Society, and Dr. Cochrane is rounding out his fiftieth year of medical practice.

\* \* \*

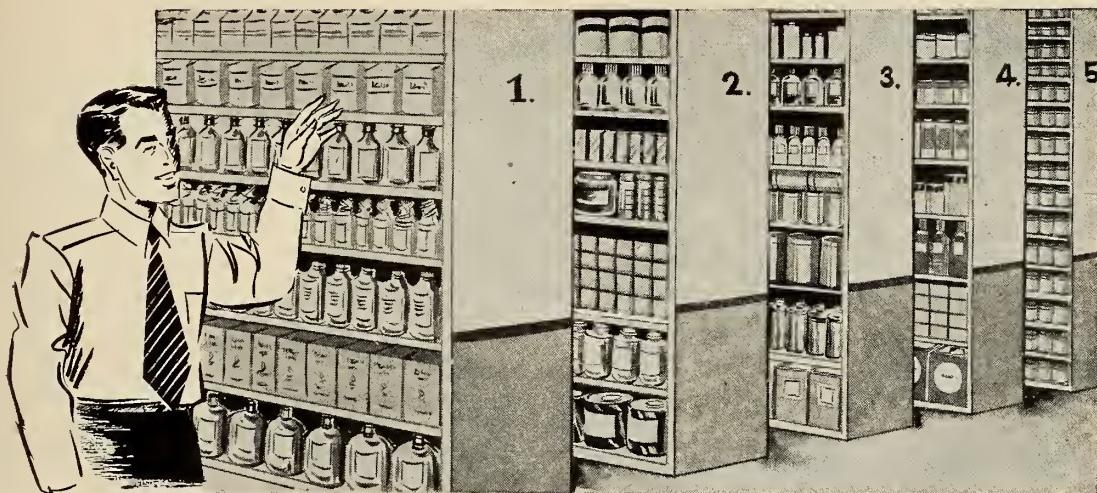
Minnesota's quota in the April fund-raising campaign to fight cancer is \$135,000. The national goal is \$5,000,000. The deaths from cancer in Minnesota alone last year reached nearly 4,000. Besides providing funds for research, periodic examinations to further early detection of cancer will receive publicity.

\* \* \*

Dr. Max Tenen, who graduated from the Minnesota University Medical School in 1941, has opened offices in the Sanford Hospital Building in Fairmont. Following completion of his internship at the Minneapolis General Hospital, Dr. Tenen took postgraduate work at the Receiving Hospital in Detroit, Michigan.

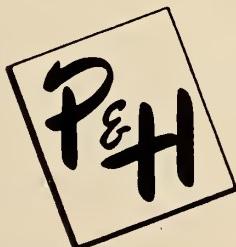
(Turn to Page 416)

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Dr. F. E. Harrington, acting superintendent of the Minneapolis General Hospital during the absence of Dr. F. W. Pollard on military leave, has been appointed superintendent of the Elizabeth Kenny Institute. Dr. Harrington was city health commissioner for Minneapolis from 1920 until he retired on June 19, 1944.

\* \* \*

The marriage of Miss Nelda Kanne, daughter of Mrs. C. W. Kanne of Faribault, to Dr. Douglas Lindsay, son of Mr. and Mrs. M. I. Lindsay, Minneapolis, took place on March 26 at the Hennepin Avenue Methodist Church in Minneapolis. Dr. Lindsay is now serving his internship in the Department of Pediatrics, University of Minnesota Hospitals.

\* \* \*

Dr. E. D. Morehead, of Owatonna, is one of the fifty American delegates who will attend the Fifth International Assembly of the International College of Surgeons which will be held in Peru in September. Dr. Morehead will present a paper on "Surgery of the Acute Gall Bladder," and one on "Treatment of Fractured Hips with the Smith-Peterson Nail."

\* \* \*

Dr. F. A. Willius, Mayo Clinic, addressed a dinner meeting of the staff of St. John's Hospital at the Minnesota Club, Saint Paul, April 26, 1945, on the subject of the electrocardiogram. He emphasized the fact that the electrocardiogram is not the final word in the diagnosis of heart disease, but that the medical history and the physical findings are still of diagnostic importance.

\* \* \*

Announcement has been received of the appointment of Captain C. H. Watkins (MC), USNR, as Clinical Administrator of all Services at the U. S. Naval Hospital, Charleston. Captain Watkins, an associate of the Mayo Clinic prior to his induction into the armed forces, was previously executive officer at the U. S. Naval Hospital at Corona, California. He also served overseas for some time.

\* \* \*

Dr. William J. Hruza, Minneapolis, who, since his induction into the armed forces, has been on duty in the Pacific theater, served in the Marianas campaign and at Iwo Jima. He reports that the wounds suffered at the latter battle were far more severe than any he treated in the Marianas. A Minnesota graduate, Dr. Hruza is a lieutenant (jg) in the Fourth Marine Division.

\* \* \*

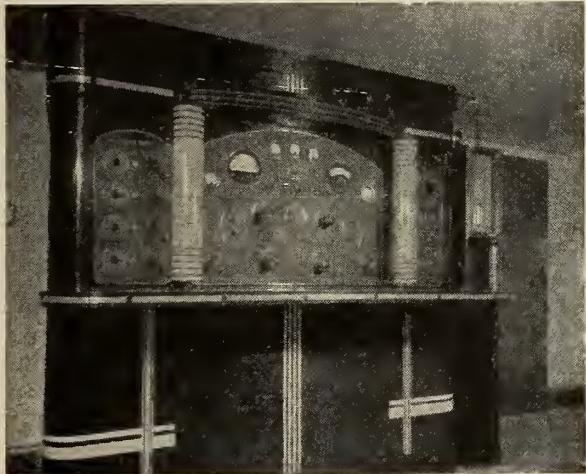
The eleventh annual anniversary dinner of the Saint Paul Surgical Society was held at the University Club, Saint Paul, April 18, 1945. Dr. George M. Curtis, Professor of Surgery, Ohio State University, Columbus, Ohio, addressed the society on "Surgery of the Spleen." Dr. Curtis gave most interesting discussions on the subject of the spleen and thyroid on several occasions during his recent visit to the Twin Cities.

(Turn to Page 418)

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In order to observe the effects of take-off and landing, Lieutenant Colonel Harry P. Harper, chief of an American field hospital in Germany, accompanied the first glider load of wounded men rescued from the Remagen Bridgehead in Germany. Colonel Harper is a former fellow in surgery at the Mayo Foundation.

Major Wilson Weisel, also a former surgery fellow at the Foundation, is stationed at the same hospital.

\* \* \*

Plans for the proposed Mayo Memorial were discussed by Dr. Harold S. Diehl, dean of medical sciences, University of Minnesota, at a meeting of the doctors of Cass, Clearwater, and Koochiching Counties in Bemidji on April 7. Dr. Diehl discussed the plans with members of the profession of St. Louis and Itasca Counties at a meeting held in Hibbing on April 8.

\* \* \*

Dr. Arthur Colberg, physician and surgeon, who returned to this country in 1943, after seventeen years as a medical missionary in China under the Augustana Lutheran Board, has opened offices at 2300 Central Avenue in Minneapolis.

Dr. Colberg is a graduate of the University of Minnesota Medical School. He served his junior internship at Ancker Hospital in Saint Paul and his senior internship at Rockefeller Hospital in Peiping, China, and is licensed for practice in California as well as Minnesota.

\* \* \*

Dr. R. V. Williams, formerly of Rushford, who moved to Indiana in 1943 and later to Chicago, is now practicing in Kankakee, Illinois, temporarily, because military induction of doctors in that city left the residents without medical service. Dr. Williams, whose offices are at 309 Arcade Building, will remain in Kankakee until a doctor can be found to take over the work on a permanent basis, or failing this, until at least one of the three regular physicians is released from military service.

\* \* \*

Dr. Erling Ostergaard, a 1926 graduate of the University of Minnesota Medical School, has joined the staff of the Estrem Clinic at Fergus Falls for the duration of his leave from his missionary post in India. Dr. Ostergaard, who returned with his family from India last fall, is chief physician and surgeon of a seventy-bed hospital at the Santal Mission, where he has served for sixteen years.

In addition to his clinic duties, Dr. Ostergaard expects to make several lecture tours through the midwest in behalf of his mission work.

\* \* \*

The medical societies of Wabasha and Winona Counties, the Tuberculosis Commission and the staff of the sanatorium at Buena Vista met at the sanatorium in their twelfth session on April 2.

Prior to a joint dinner, the various groups gathered separately for consideration of their particular business. Following the dinner an interesting scientific program, arranged by Dr. D. O. N. Lindberg, superintendent of

the sanatorium, was presented. Dr. C. G. Oschner, president of the Wabasha County Society, presided.

Papers were read by Dr. Viktor O. Wilson, director of the Division of Child Hygiene, Minnesota Department of Health, Dr. Roger Kennedy, of the Mayo Clinic, and Dr. Lindberg.

\* \* \*

A Minneapolis physician, Commander Horatio B. Sweetser, is chief of medicine on the first American hospital ship that landed at Iwo Jima. The ship, which is staffed with twenty-two doctors, arrived at the island on the morning after D-Day. It immediately began transferring the wounded to Guam and Saipan for hospitalization and remained in continuous service for the duration of the fighting. A Japanese shell—an armor-piercing projectile—fired into the shipping struck the ship's superstructure but, fortunately, it was a dud and landed harmlessly at the bottom of the ventilating shaft.

The work at Iwo Jima completed, the ship was ordered to Okinawa, and later nearer to the equator, where Commander Sweetser found it very hot.

\* \* \*

#### Minnesotan Decorated

The Legion of Merit has been awarded to Colonel Karl R. Lundberg, MC, U. S. Army, for outstanding service in the "development of the present program for vaccination against infectious diseases and the general control of infectious diseases among troops."

Colonel Lundberg, a 1925 graduate of the College of Medicine, Minnesota University, is stationed at New Delhi, India, where he is India-Burma Medical Inspector and Chief of Preventive Medicine in SOS Headquarters.

#### MINNEAPOLIS SURGICAL SOCIETY

(Continued from Page 400)

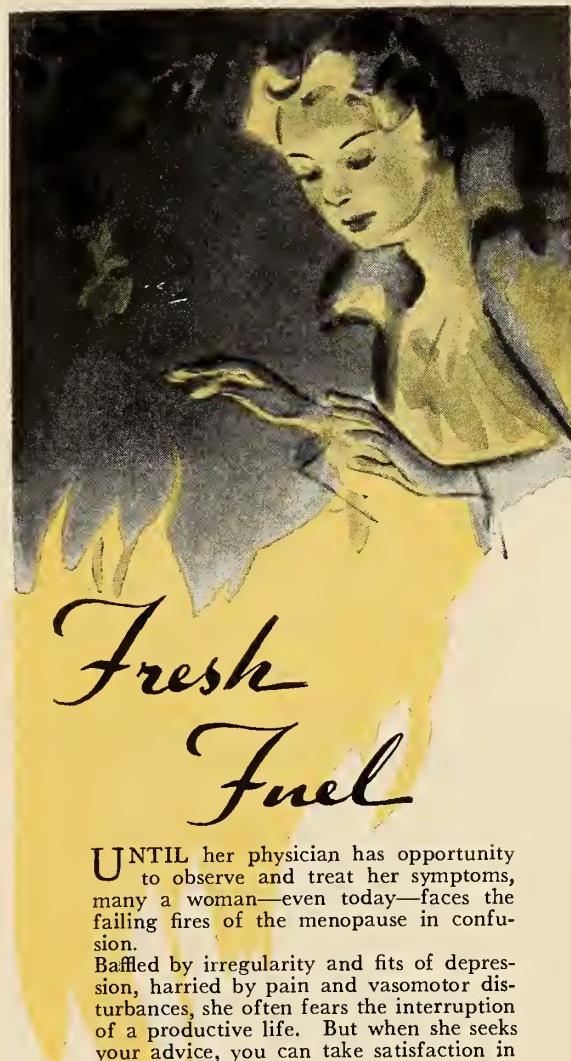
ings. For this reason, penicillin has been injected parenterally as a prophylactic measure. Such lesions are not infrequently invaded by hemolytic streptococci and staphylococci, and under those circumstances penicillin should be of value. Solutions of penicillin have also been used topically in the treatment of burns. I have seen this carried out in a few patients, and I have not been too favorably impressed by the results, probably because the lesions were the site of a mixed type of infection.

DR. L. C. CULLIGAN: Do you think that intramuscular penicillin should be used prophylactically in case of ruptured appendices where sulfanilamide has been used locally?

DR. W. W. SPINK: As I stated previously, there are indications that penicillin should be used systemically for peritonitis. But at the same time, I would use one of the sulfonamides, preferably sulfadiazine or sulfathiazole, and I would give the sulfonamide parenterally rather than placing it in the peritoneal cavity.

DR. C. E. MERKERT: Has anyone at the University Hospital used penicillin in the peritoneal cavity following a ruptured appendix?

DR. W. W. SPINK: As far as I know, that has not been done. It probably would be more advantageous to use the penicillin parenterally.



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## BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

### Books Received for Review

**DOCTORS AT WAR.** Morris Fishbein, M.D., Editor of *Journal of the American Medical Association*, and of *Hypogea*; chief editor of *War Medicine*; chairman of the Committee on Information of the Division of Medical Sciences of the National Research Council. 418 pages. Illus. Price, \$5.00, cloth. New York: E. P. Dutton & Co. Inc., 1945.

**BEDSIDE CLINICS.** Francis D. Murphy, M.D., F.A.C.P. Professor and Head of Department of Medicine of Marquette University Medical School and Clinical Director of Milwaukee County General Hospital and Emergency Unit. 185 pages. Price, \$3.00, cloth. Milwaukee: Marquette University Press, 1945.

**PENICILLIN THERAPY, Including Tyrothricin and Other Antibiotic Therapy.** John A. Kolmer, M.S., M.D., Dr.P.H., Sc.D., LL.D., L.H.D., F.A.C.P. Professor of Medicine in the School of Medicine and the School of Dentistry, Temple University; Director of Research Institute of Cutaneous Medicine; Formerly Professor of Pathology and Bacteriology, Graduate School of Medicine, University of Pennsylvania. 303 pages. Illus. Price, \$5.00, cloth. New York: D. Appleton-Century Co., 1945.

**EXAMINATION OF REFLEXES.** Robert Wartenberg, M.D. Foreword by Foster Kennedy, M.D. 222 pages. Illus. Price, \$2.50, cloth. Chicago: Year Book Publishers, Inc., 1945.

**CONTROL OF PAIN IN CHILDBIRTH.** C. B. Lull and R. A. Hingson. 356 Pages. Illus. \$7.50. Philadelphia: J. B. Lippincott Co., 1944.

When one recalls that one author of this book is a leading obstetrician, and the other, one of the discoverers and promoters of caudal anesthesia, one might justly conclude that this volume gives great prominence to caudal anesthesia as a method of pain control in childbirth. This conclusion may be correct, but it is not quite justified when one considers the merits of the book as a whole. It is true that in Part One, dealing with the anatomy of the organs of parturition, all but about two of its twenty-five pages are devoted to the vertebral column, sacrum, sacral canal, with illustrations of over thirty sacri.

The authors discuss fully all types of pain control, inhalation anesthetics of all kinds, the barbiturates, intravenous anesthesia, local anesthesia, rectal anesthesia and paraldehyde, spinal anesthesia, and of course caudal anesthesia. They also discuss fully the type of anesthetic that is best suited to all the complications that arise in pregnancy, including upper respiratory infections, cardiac disease, the different types of toxemia, the various blood diseases, hemorrhage during pregnancy, cesarean section, et cetera. One can hardly think of a complication arising during pregnancy for which the authors do not advise what, in their experience, has proven to be the best anesthetic. In Chapter Two the



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authors give a series of illustrations, fourteen in number, where they attempt to show by different colors and shading the stimulating and the depressing effects which the various anesthetics have on the organs of the mother and the baby, such as the brain, respiratory center, lungs, heart, liver, kidneys, adrenals, and of course on the uterus of the mother.

This is a very good book and covers the subject well. Inside the back cover is a list of antidotes to be given for overdosage.

ALBERT G. SCHULZE, M.D.

**PATHOLOGY OF LABOR, THE Puerperium AND THE NEWBORN.** Charles O. McCormick, A. B., M.D., F.A.C.S.; Clinical Professor of Obstetrics, Indiana University School of Medicine; Consulting Obstetrician to William H. Coleman Hospital for Women, Indianapolis, and Sunny Side Sanitarium. 382 pages, with 191 illustrations including 10 in color. Price \$7.50. St. Louis: The C. V. Mosby Company, 1944.

This is a very concise small textbook; it is a condensation of a series of the author's lectures prepared for the Senior Medical Students at Indiana University. Only the essentials of present-day obstetrics are presented; however, a considerable number of selected references are found throughout the text which are valuable for collateral reading.

Illustrations are profuse and of excellent quality for teaching purposes. All the obstetric operations are illustrated, including Cesarean section. The various methods of obstetrics are described including a rather full outline of the technique in continuous caudal anesthesia.

There is a short section devoted to the pathology of the newborn including birth injuries, malformations and a short section on erythroblastosis fetalis considering the RH factor.

The book is well written, complete and of particular value to medical students, interns, and to the older men who want an up-to-date review of modern obstetrics.

JAMES R. MANLEY, M.D.

## JOHNSTON LECTURE ON NEUROLOGY

The first J. B. Johnston Lecture on Neurology was given by Dr. O. Larsell of the University of Oregon Medical School at 8:15 P.M., Friday, May 11, at the Auditorium of the Museum of Natural History, University of Minnesota. The subject of the lecture was: Comparative Neurology and Our Present Knowledge of the Cerebellum.

The lectureship was endowed by Mrs. Johnston in memory of her husband who was an outstanding comparative neurologist. Dr. Larsell is an outstanding authority on the morphology and significance of the different lobes of the cerebellum.

On Thursday, May 10, at 5 P.M., in the amphitheatre of the Institute of Anatomy, Dr. Larsell gave a lecture on the History of Medicine in the Northwest, a subject in which he has been particularly interested for many years. He is planning to publish his findings in book form in the near future.



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# Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 28

June, 1945

No. 6

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JUNE, 1945

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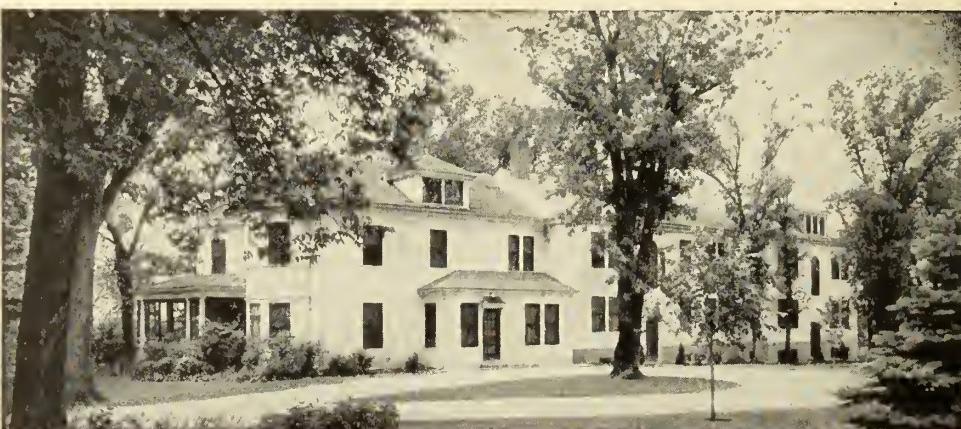
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# Minnesota Medicine

*Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society*

Volume 28

June, 1945

No. 6

## THE ACCUMULATED EXPERIENCE OF THE DEPARTMENT OF PATHOLOGY, UNIVERSITY OF MINNESOTA, NEUROPSYCHIATRIC MATERIAL

### II. Brain Trauma

ROBERT L. MELLER, M.D.  
Minneapolis, Minnesota

IN 1942 a general survey was published on the accumulated experience of the Department of Pathology of the University of Minnesota on the neuropsychiatric material.<sup>1</sup> This survey consisted of analysis of all cases with nervous system involvement, autopsied between the years 1919 to 1938 and resulted in a selection of 13,479 cases on which recorded studies of the nervous system were available for analysis. Of these, 2033 were cases of brain trauma. Because this large number of cases were available it was felt that it would be worth while to analyze them in an attempt to evaluate some of the accepted clinical concepts of cerebral injuries and to see whether any new findings might be obtained. Of the 2033 cases of brain trauma, 1280 contained adequate data to allow for their use in the present study.

After surveying these data, it was felt that this large amount of material could be best discussed under four separate headings:

1. The correlation of location of fracture with the type of intracranial pathology.
2. The effect of the age of the patient on the type of resulting intracranial pathology.
3. The correlation of the survival time of the patient with the type of intracranial pathology.
4. The correlation of the age of the patient with the survival time after injury.

Assistance in the accumulation of these data was furnished by the personnel of the Works Projects Administration: Official No. 165-1-71-124: Subproject No. 288.

From the Department of Neuropsychiatry, University of Minnesota.

### Correlation of the Location of the Fracture With the Type of Intracranial Pathology

The cases of brain trauma were divided into five groups as regards intracranial pathology: (1) ventricular hemorrhage, (2) meningeal bleeding, (3) concussion, (4) contusion, and (5) laceration. Only those cases which showed at autopsy clotted blood within the ventricles without other evidence of brain damage were classified under the heading of ventricular hemorrhage. For convenience, regardless of the membrane involved, a single grouping of meningeal bleeding was used. The usual accepted criteria for brain contusion and laceration were used. The contusions consisted of brain bruising, the lacerations of brain tearing. The greatest difficulty and perhaps the greatest inaccuracy was encountered in attempting to identify the cases of cerebral concussion. Since this is a clinical term there is no accurate pathological criterion available for their identification. In this study cases were listed as concussion which had either no grossly demonstrable lesions or at most scattered isolated petechiae. Obviously many cases of actual concussion must have been associated with meningeal bleeding but because of the absence of definite brain pathology were placed in the meningeal bleeding group. It is very likely, therefore, that our group of cerebral concussions is smaller than it should be and the group of meningeal bleedings proportionately greater.

Of the total of 1280 cases, sixty-four had no fracture, 455 had basal fractures, 179 had an-

# NEUROPSYCHIATRIC MATERIAL—MELLER

TABLE I. FRACTURE LOCATION AND TYPE OF INTRACRANIAL PATHOLOGY

	Ventricular Bleeding	Meningeal Bleeding	Concussion	Contusion	Laceration	Totals
No fracture	6	29	14	45	6	64
Basal fracture	3	22	8	54	13	455
Anterior vertex	1	22	7	52	18	179
Posterior vertex	3	29	4	53	11	125
Both basal and vertex	2	14	4	50	30	457

(All numbers except totals have been reduced to percentage in order to facilitate comparison.)

TABLE II. FRACTURE LOCATION AND LOCUS OF MENINGEAL BLEEDING

	Subarachnoid	Subdural	Subarachnoid and Subdural	Total Per Cent
No fracture	17	11	8	36
Basal fracture	12	8	3	23
Anterior vertex	8	10	4	22
Posterior vertex	6	17	6	29
Both basal and vertex	5	6	3	14

(All numbers have been reduced to percentage in order to facilitate comparison.)

terior vertex fractures, 125 had posterior vertex fractures, and 457 had both vertex and basal fractures.

Table I summarizes the relationship between the fracture location and the type of intracranial pathology. The numbers in this table are percentages. They represent the percentage of each location of skull fracture occurring with the different types of intracranial pathology; for example, 6 per cent of the cases with no fracture showed ventricular bleeding (column 1, line 1). One would expect that the more severe basal fracture would be associated with more severe brain damage; however, from this tabulation one observes that the location of the skull fracture has very little influence upon the nature of the intracranial pathology. Only two significant variations appear, neither of which is entirely unexpected. Cerebral concussion was considerably more frequent when no fracture was present, while cerebral laceration was most common with the most severe type of fracture; namely, the combined base and vertex involvement.

Since in Table I all cases of meningeal bleed-

TABLE III (A). AGE AND TYPE OF INTRACRANIAL PATHOLOGY FOR VERTEX FRACTURE

Age	Meningeal Bleeding	Concussion	Contusion	Laceration	Totals
0-5	30	10	55	0	20
6-10	33	6	50	6	18
11-20	18	11	48	22	27
21-30	22	6	54	16	50
31-40	16	8	58	18	38
41-50	22	7	46	24	41
51-60	33	0	56	8	27
61-70	24	0	54	22	37
71+	35	4	48	9	46

(All numbers have been reduced to percentage in order to facilitate comparison.)

TABLE III (B). AGE AND TYPE OF INTRACRANIAL PATHOLOGY FOR BASAL FRACTURE

Age	Meningeal Bleeding	Concussion	Contusion	Laceration	Totals
0-5	25	5	20	50	20
6-10	16	3	48	23	31
11-20	17	6	52	22	54
21-30	19	8	51	22	103
31-40	17	6	54	21	136
41-50	16	9	56	17	161
51-60	23	7	52	19	155
61-70	15	3	54	25	156
71+	19	5	51	25	96

(All numbers have been reduced to percentage in order to facilitate comparison.)

ing were grouped together, it was thought of interest to separate these bleedings into the individual membranes involved in order to determine whether any single type of meningeal bleeding was correlated with any particular location of fracture.

Table II demonstrates that there was little correlation between the location of the fracture and the type of meningeal bleeding.

### The Effect of the Age of the Patient Upon the Type of Resulting Intracranial Pathology

As a second step in this study an attempt was made to determine whether the age of the patient in any way played a part in influencing the nature of the resulting brain damage. These data are tabulated in Table IIIA and IIIB.

The location of the associated skull fracture was also included in these tables. All figures represent the percentage of the individual type of

## NEUROPSYCHIATRIC MATERIAL—MELLER

TABLE IV. TYPE OF INTRACRANIAL PATHOLOGY AND SURVIVAL TIME AFTER INJURY

	Instant	Under 1 Hour	1-6 Hours	7-12 Hours	13-24 Hours	25 Hrs.—2 Days	3-4 Days	5-7 Days	8-14 Days	Over 14 Days	Total
Ventricular Hemorrhage	21	21	32	4	14	4		4			28
Meningeal Bleeding	8	15	27	6	15	9	8	6	4	2	246
Concussion	4	15	17	9	14	16	16	2	4	4	81
Contusion	6	13	26	8	13	10	12	6	4	1	641
Laceration	18	15	20	5	9	7	7	4	9	5	236

(All numbers except totals have been reduced to percentage in order to facilitate comparison.)

TABLE V. AGE AND SURVIVAL TIME AFTER INJURY

Age	Died in the first day after injury		Lived over one day but not over one week		Lived over one week		Totals
	No.	%	No.	%	No.	%	
0-5	33	80%	7	17%	1	3%	41
6-10	35	73%	11	23%	2	4%	48
11-20	56	71%	18	23%	5	6%	79
21-30	117	80%	22	15%	7	5%	146
31-40	125	71%	46	26%	5	3%	176
41-50	132	65%	62	30%	11	5%	205
51-60	117	66%	48	27%	12	7%	177
61-70	144	68%	58	27%	11	5%	213
71+	86	58%	47	32%	14	10%	147

intracranial lesion occurring in its particular age group. From these tables one observes that the age of the patient has very little relationship with the type of intracranial lesion resulting from the trauma.

#### Correlation of the Survival Time of the Patient With the Type of Intracranial Pathology

In the present study there were 1232 cases on which the above data were available. The material is presented in Table IV.

The numbers in this Table are percentages. They represent the percentage of the patients having a particular type of intracranial pathology surviving a given period of time. A most striking observation is the relative lack of relationship between the survival time and the type of intracranial pathology. This is unexpected since one would naturally assume that milder forms of injury would show longer survival times. It is possible that this discrepancy arises from the nature of our material. One can speculate that some of the cases with the longer survival periods may have escaped the attention of the coroner's service and therefore would be lacking from the present study. There are a few other interesting points to note in the data presented

in Table IV. It has generally been accepted that an intraventricular hemorrhage usually produces a fairly rapid lethal outcome. One of our patients lived six days after the injury and at autopsy showed ventricles full of clotted blood. A number of patients in whom a ventricular hemorrhage was associated with brain damage showed surprisingly long survival time. Eight patients of this type survived for more than four days and one case with both cerebral laceration and clotted blood in the ventricles lived for over two weeks. Generally, however, extensive hemorrhage into the ventricles resulted in fairly rapid lethal outcome with 74 per cent of our patients dying within the first six hours after injury. As would be expected, the patients with cerebral lacerations had the shortest survival times (53 per cent died in the first six hours after injury). Similarly patients with cerebral concussion had the longest survival times (36 per cent died in the first six hours after injury). It is interesting to note that patients who presented pathological findings of meningeal bleeding alone revealed a rather short survival time (50 per cent died within the first six hours after injury). In many of these patients the nature of the apparent pathological lesion did not seem severe enough to pro-

## SYSTEMIC SARCOIDOSIS—BRIGGS

TABLE VI. PERCENTAGE OF CASES OF EACH AGE GROUP WHICH HAD A CEREBRAL LACERATION

Age	Vertex Fracture	Basal Fracture
0-5	0	50
6-10	6	23
11-20	22	22
21-30	16	22
31-40	18	21
41-50	24	17
51-60	8	19
61-70	22	25
71+	9	25

duce such rapid death. No doubt as was stated earlier many of these patients probably had an associated cerebral concussion which naturally could not be identified at autopsy.

### Correlation of the Age of the Patients With the Survival Time After Injury

Table V demonstrates the influence of age on the survival time of the patient regardless of the nature of the pathologic lesion. The latter was not considered in the present tabulation since from Tables III and IV it appears that the nature of the pathologic lesion has very little correlation either with the age of the patient or with the survival time. The only significant fact observed in this latter comparison is the surprisingly long survival time that appeared in the older age groups. One might speculate that perhaps these individuals had less severe injuries. This is not borne out by Table VI which demon-

strates that of the total group of cerebral lacerations studied, as many occurred in the older as in the younger individuals.

It remains difficult to account for the fact that older individuals do tolerate brain damage somewhat better than younger individuals, nevertheless, this fact remains inescapable from the present studies.

### Summary and Conclusions

This study comprises a review of 1280 cases of brain trauma autopsied at the University of Minnesota, and reveals the following significant facts concerning this type of lesion:

1. In general, the location of the skull fracture has very little effect upon the nature of the brain pathology resulting.
2. Cerebral lacerations are somewhat more common with the combined base and vertex involvement than with other fracture locations.
3. The age of the patient does not influence the type of brain lesion resulting from the trauma.
4. The type of brain injury has relatively little correlation with the survival time of the patient.
5. Occasional cases of intraventricular hemorrhage will show relatively long survival time.
6. The older age groups tend to have a slightly longer survival time after injury than the younger age groups.

### Reference

1. Baker, A. B. and Noran, H. H.: The accumulated experience of the Department of Pathology, University of Minnesota, on neuropsychiatric material. I. General review. Minnesota Med., 25:187-190, 1942.

## SYSTEMIC SARCOIDOSIS

JOHN FRANCIS BRIGGS, M.D.

Clinical Assistant in Medicine, University of Minnesota  
Saint Paul, Minnesota

FOR many years men in the various specialties of medicine saw a disease syndrome that they felt was peculiar to their specialty. The ophthalmologists called the disease uveoparotid fever. The dermatologists called the disease lupus pernio. The roentgenologists considered it as an atypical form of miliary tuberculosis of the lung. The orthopedists looked upon it as a form of

osteitis tuberculosa multiplex dystoides. Other men who saw this disease gave to it a name that would best describe it according to the limitations of their specialties. The result was that the single systemic disease was recognized by a wide variety of names, and there was little to demonstrate the connection between the seemingly dissimilar entities. It remained, however, for

Schaumann and others to point out that these various diseases were actually part and parcel of a single disease, and that the clinical expression depended upon the organ that was involved. They felt that this correlation could be made because in the various organs involved, the diseased tissue contained a peculiar tubercle called the sarcoid tubercle.

This tubercle differs from the tubercle of tuberculosis in that there is no central caseation. The tubercle bacillus has never been demonstrated within the lesion, the epithelioid reaction is maximal, the giant cell reaction is usually minimal and the fibrous tissue reaction is great. We may then state that sarcoidosis is a disease that may affect any organ or group of organs within the body. The clinical expression of the disease will depend upon the organs involved. The histological structure will resemble tuberculosis. The following cases of sarcoidosis have been seen at the Ancker Hospital, St. Paul, Minnesota. In these case reports only those findings pertinent to the discussion of sarcoid disease will be included.

**Case 1.**—W. F., a white married man, aged forty-three, was first seen at the Ancker Hospital medical dispensary on October 5, 1932, at which time it was felt that he was suffering from bronchitis. The x-ray examination of his chest on October 5, 1932, revealed a mediastinal mass which was thought to be a lymphoma, and in addition there were increased markings in both of the lung bases. He made many visits to the out-patient department, but on November 16, 1932, he returned complaining of severe weakness. At this time a diagnosis of hyperthyroidism was considered. On February 22, 1933, he again returned to the clinic, and at this time it was found that he had generalized lymphadenopathy. His temperature was 99° F. He came to the clinic many times during 1933, but at no time was there any definite or specific complaint referable to any of the systems or organs in the body. A tentative diagnosis of lymphoma was made because of the x-ray appearance of the mediastinum as well as the presence of a universal lymphadenopathy. On January 21, 1935, the examiner thought that the spleen was palpable. There was still no definite single diagnosis to explain the patient's general condition. On February 25, 1937, a biopsy of a lymph node was reported as being tuberculosis adenitis. The patient returned many times to the clinic because of various non-specific complaints. On many of these visits, however, he had a temperature elevation of 99° F. A course of x-ray treatments to the mediastinal area failed to affect the enlarged masses. On October 21, 1942, the patient complained for the first time of pain in the fingers of his left hand. X-ray examination of this hand showed typical changes of sarcoid disease

of the bone. In view of these findings Dr. Aurelius reviewed the numerous x-rays of the patient's chest and finally suggested that in all probability the best explanation for the patient's general condition was that he had systemic sarcoidosis. A second lymph node was

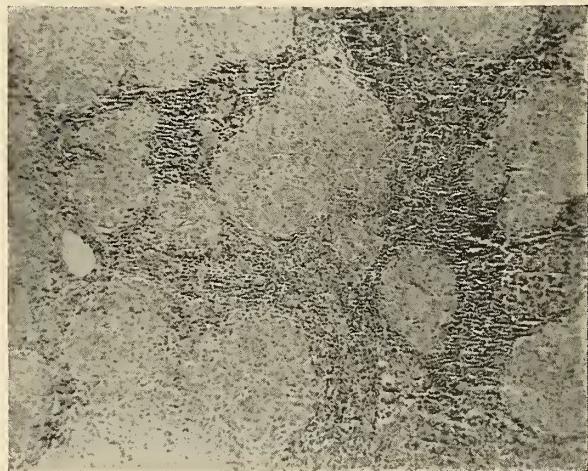


Fig. 1. Sarcoid tubercles.

then removed and Dr. Noble reported this node as being typical of sarcoid disease. He then reviewed the previously removed biopsy material and called this sarcoid disease, also. The patient was admitted to the hospital on February 5, 1943, for further study relative to the establishment of the diagnosis of sarcoidosis. He left the hospital on February 13, 1943. On September 1, 1943, the left lacrymal sac was removed and histologically it also was found to be affected with sarcoidosis.

Following are the laboratory results obtained during the many visits the patient made to the clinic and to the hospital. The hemoglobin varied from 90 per cent to 72 per cent; the red blood count 4,470,000 to 4,200,000; the white blood count 9,750 to 5,300. The differential counts were always within normal limits and there was always normal morphology. The reticulocyte count was 3 per cent. The blood Wassermann test was negative. The plasma protein was as follows: albumin 4.25 gms. per cent, the globulin 2.90 gms. per cent. The blood uric acid was 3 mgs. per 100 c.c. The sedimentation rate varied from 3 mm. to 18 mm. in one hour. Repeated urine examinations were normal. The Mantoux test with 1:1000 solution was negative, and with a dilution of 1:100 it was negative. The Mantoux test using avian tuberculin 1:1000 was negative, and with 1:100 dilution it was negative. The venous pressure was 11.2 cm. of water. Circulation time, arm to tongue, was fourteen seconds and the arm to lung was six seconds.

This is a case of sarcoidosis which involved the lymph nodes, the lungs, the bones and the lacrymal sac. It demonstrates the prolonged mild morbidity which is characteristic of this disease.

**Case 2.**—E. B., a married Jewish man, sixty-six years of age, was first seen at Ancker Hospital on June 11,

1935, because of generalized lymphadenopathy. At this time he stated that the lymphadenopathy occurred first in 1932. Since 1932, however, he had had four attacks wherein the lymph nodes became enlarged, tender and swollen. During the time of these seizures his temperature would be elevated and he would feel sick. Four or five days following the onset of the enlargement of the nodes they would begin to recede, and in a short time he would be normal. During the last few years he also noticed that his testicles were becoming enlarged. This enlargement later was found to be the result of a bilateral hydrocele. In addition, the patient had the symptoms of prostatism and on July 3, 1934, he underwent a transurethral resection. He did not obtain complete relief from this operative procedure, and it was repeated on December 5, 1934. He was not seen again at the hospital until April 12, 1944, when he entered complaining of hematuria. He had felt perfectly well during the intervening ten years except that about twice yearly he would have a recurrence of his generalized lymphadenopathy and with this recurrence he would become toxic and would have a fever. On May 31, 1944, he underwent a third transurethral resection for the recurrence of symptoms of prostatism. Following this operative procedure he was transferred to the medical service in order that an investigation of his recurring lymphadenopathy could be completed. At this time the only physical finding of any value was the presence of universal lymphadenopathy. The nodes were enlarged and tender. On April 24, 1944, an inguinal node was removed for study. Dr. Noble was unable to make a definite diagnosis from the submitted material. A cervical node was then removed on May 3, 1944. Dr. Noble then reported that the node was characteristic of sarcoid disease.

During the patient's stay in the hospital the following laboratory results were obtained. His hemoglobin varied from 84 per cent to 100 per cent; red blood count from 4,940,000 to 5,440,000; the white blood count from 6,300 to 17,650. The differential counts were always normal. The blood urea nitrogen was 37.8 gms. per 100 c.c. of blood; creatinin 2 mg. per 100 c.c. The blood Wassermann test was negative; the blood sugar was 144 mg. per 100 c.c.; the sedimentation rate 36 mm. in one hour. The urine examination was within normal limits following the transurethral operations.

This patient is an instance of sarcoidosis, which, as far as we know, seems to be limited to the lymph nodes. It does demonstrate, however, the bizarre and protean manifestations that are also characteristic of this disease.

Two instances of sarcoidosis proven by biopsy have been reviewed. In the first instance the dis-

ease involved the lymph nodes, lungs, bones and lacrymal sac. This is a rather common manifestation of the disease. In the second instance, the protean clinical manifestations of this disease are noted, namely, periodic lymphadenitis associated with hyperpyrexia.

### Summary

Boecks sarcoidosis may be defined as a systemic disease of unknown etiology, which, however, may be a variant of tuberculosis. The incidence of the disease is unknown. It affects both sexes and apparently affects all races of people. The colored race has a higher incidence of the disease than does the white race. There are no pathognomonic signs of this disease. The disease can and will affect any tissue or organ in the body. It does, however, have a particular predilection for the lymph nodes, lungs, skin and bones. The disease is characterized pathologically by the presence within the diseased tissue of a granulomatous lesion, and this granulomatous lesion contains the tubercle, characteristic of the disease. In repetition this tubercle differs from the tubercle of tuberculosis in that there is no caseation; the tubercle bacillus is not present; the epithelioid reaction is great; the fibrous tissue reaction is great and the giant cell reaction is usually minimal. The disease is one of high morbidity and low mortality, and there is no known treatment for the condition.

Sarcoidosis should be suspected in any individual who seems to have tuberculosis but in whom the Mantoux reaction is negative or only slightly positive, and in whom the tubercle bacillus cannot be demonstrated by smear, culture or guinea pig inoculation. Once the disease is suspected, the diagnosis can only be established by finding within the diseased tissue the characteristic tubercle of sarcoidosis.

706 Lowry Med. Arts Bldg.

### References

- Reisner, David: Boeck's sarcoid and systemic sarcoidosis. Amer. Rev. Tuberc., 49:289. (April) 437, (May) 1944.  
Rubin, E. H., and Pinner, Max: Sarcoidosis. Amer. Rev. Tuberc., 49:146-169, (Feb.) 1944.

## STENOSIS OF THE SIGMOID IN THE NEWBORN

W. R. BAGLEY, M.D., and E. C. BAGLEY, M.D.  
Duluth, Minnesota

**C**ONGENITAL atresia or stenosis of the bowel in newborn infants is of relatively rare occurrence. Wangensteen<sup>3</sup> states that one in 20,000 babies may have one of these defects. In 1931 Wangensteen and Webb found mention of over 500 cases of congenital atresia of the intestines in the literature with nine survivals. Both sexes are equally represented. Theories of origin include arrested development (failure to acquire a lumen), fetal peritonitis and adhesions, anomalies in the blood supply with developmental defects—all carrying weight in explaining some of the findings. The most frequent site of obstruction is in the duodenum and jejunum. In 392 cases collected by Davis and Poynton, the following locations are found:

Duodenum above the papilla....	59 cases	33%
Duodenum below the papilla....	75 cases	
Jejunum .....	60 cases	
Ileum and cecum.....	101 cases	
Colon .....	39 cases	10%
Multiple areas .....	67 cases	

Vallor and associates in 224 cases gave the following percentages:

Duodenum .....	33%
Jejunum .....	53%
Large intestine .....	10%

Atresia of the rectum occurs about once in 5,000 births. Heredity seems to play a part in this defect as three children in a family of ten were born with atresia of the rectum. Degrees of obstruction in all the varieties vary from stenosis to complete obstruction. There may be an interruption in the continuity of the bowel with or without a mesentery.

*Diagnosis.*—At birth the infant ordinarily takes the first feeding well. Congenital hypertrophy of the pyloris with stenosis rarely gives symptoms in the first two or three weeks of life whereas atresia of the duodenum gives symptoms soon after birth. The rule is that the higher the actual obstruction the sooner the vomiting. If the stenosis is complete and if it is above the bile duct no bile will be found in the vomitus. If below the bile duct, no bile will be in the meconium. In

adults, intestinal colic attended with considerable distention without vomiting has been considered an outstanding feature of obstruction in the colon. This probably holds true in babies. Fecal vomiting is uniformly an accompaniment of obstruction of the small bowel. The frequency of jaundice in the newborn negates its value as a diagnostic finding in locating a stenosis unless it is associated with other allied symptoms. Pyloric obstruction affects the male child fifty times as often as the female child. Intestinal atresia and stenosis affects both sexes alike. Incomplete atresia is rarer than complete atresia but some cases of incomplete atresia of the small bowel have been found in grownups. The x-ray film can give evidence of the level of the obstruction. The newborn infant is a poor surgical risk. It cannot stand a loss of vital fluids and the small lumen and delicate, easily torn tissue make the thin-walled bowels of infants difficult for surgery. Early recognition, extreme gentleness, hemostasis, use of plasma, whole blood and proper hydration before, during and after surgery are requisite for success. In 1941 Ladd and Gross<sup>2</sup> of the Boston Children's Hospital listed fifty-two patients operated with intestinal atresia with seven recoveries. Wangensteen<sup>3</sup> makes the statement that atresia of the small intestine calls for immediate anastomosis around the obstructed area. Establishing a fistula in the small bowel as a preliminary is doomed to failure. This advice does not hold for colon surgery. To facilitate the handling of these pencil-sized bowels he advocates inflating them (the site of section to be used) with air using a fine needle and syringe. He advocates the use of vitamin K to reduce the tendency to hemorrhage and silk and cotton in preference to gut in making a lateral anastomosis. Taking known precautions, the mortality rate has steadily decreased. With it all, however, the pre- and postoperative care of a trained pediatrician is of vital importance.

### Case Report

This first child was delivered by Dr. E. C. Bagley, June 6, 1944, by low forceps at St. Luke's Hospital. His weight was 8 pounds. The original moderate

## STENOSIS OF THE SIGMOID—BAGLEY AND BAGLEY

asphyxia changed to a good color following a cry. He seemed normal in every way until forty-eight hours after birth when the abdomen became distended and the baby began vomiting green-colored mucus. A flat

quate. The decompression tube was removed on the seventh day and a regular feeding program was instituted. The colostomy worked well. The greatest source of discomfort the baby had came from the excoriation

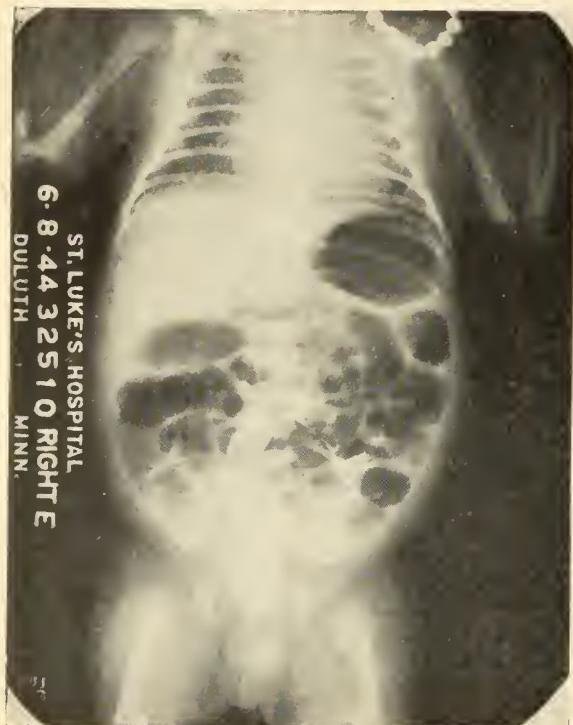


Fig. 1. X-ray following barium enema showing stenosed sigmoid and gas-filled bowel above the obstruction.

plate of the abdomen and finally a barium enema (Fig. 1) were interpreted as indicative of obstruction in the first part of the sigmoid where it crosses the pelvic brim. The barium enema stopped at this level and above it loops of intestines were seen greatly distended with gas. Fifty-two hours after birth a laparotomy was performed for obstruction. Through a left rectus incision the parietal peritoneum was incised near the colon and the contracted and obstructed first part of the sigmoid was liberated and brought through the incision. Several gut to incision peritoneum sutures were used along with a stiff piece of catheter passed through the mesentery underneath the liberated loop to hold it above the skin surface. We thought the stiff rubber catheter would be less rigid, more adjustable and less necrosis-producing than a glass rod which we use for an adult. The excess abdominal opening was closed and a small catheter inserted in the proximal end of the bowel. An interesting observation was that the surprisingly long appendix was blue black from distention and would only have needed a pin prick to make it burst like a bubble. Due to the excellent care of Dr. R. P. Buckley this baby had very few alarming reactions from this and subsequent surgical procedures.

On the fifth day the loop of sigmoid sluffed through but its ends stayed *in situ* so that function was ade-



Fig. 2. Infant at eight months.

around the colostomy caused by the excretions. This was finally entirely relieved by liminal paste. The baby had thrived for three months when we began the restoration of the continuity of the colon. The distal colon segment had had numerous enemas dilating it frequently over a period of weeks. The gut of the infant is such a small structure that we could not be sure of the intra-abdominal arrangement of the approximated walls of the sigmoid at the colostomy so we made a central incision to be sure of this and loosened several loops of small bowel, one of which came well up between the barrels of the colostomy.

We used the old McGraw method of enterostomy with the necrosing pressure of a rubber band supplemented by outside Lembert sutures. In carrying out the McGraw colo-colostomy we threaded a curved noncutting needle with a "live" snap rubber band. Putting this rubber on a stretch made the combined caliber of both lengths less than the caliber of the needle. The needle with double rubber was passed through the distal position of the colon just underneath the abdominal wall downward in the lumen of the gut to a length greater than the diameter of the colon. The needle was brought out at this point and entered into the lumen of the proximal colostomy segment and up to a point opposite the needle entrance in the distal position. The two strands of rubber were pulled tight and two cotton thread ties were used to keep them from slipping. The excess rubber was cut away. The close approximation of the walls of the colon by this procedure effectively sealed off any leak. There was very little reaction following this operation and the central incision healed by primary union. On the fifth postoperative day we had bowel movements passing through the anus; how-

ever, the colostomy was still the passage of least resistance. With the newly established opening as the low point for the anastomosis we established a larger opening by pressure necrosis using forceps as in the usual Mikulicz procedure. Because of the smallness of our patient and his parts a method of holding the forceps grasping the colon partition called for extra planning. A small, narrow-bladed, straight forceps was used to grasp the partition down to the McGraw rubber band opening. A piece of roller bandage was passed through the forceps handle and fastened to the upper sides of the crib. The bandage was tied loosely permitting considerable movement on the part of the child but maintaining a vertical position of the forceps. The child's arms and legs were restrained enough to prevent contact with the forceps. In a little less than five days the forceps came loose and soon the rectum was discharging a volume of feces. When the baby was five and one-half months old a closure of the colostomy was made. This was not entirely successful at first due to infection but the contraction of healing finally closed the area off and he now gives every appearance of being a very normal baby.

### Discussion

In early vomiting and distention of the newborn, x-ray findings may be most diagnostic. Air evidently attains a low point in the patulous gut very soon after birth and demarkation between distended and collapsed bowel is very apparent in roentgenograms. In our case a flat plate showed small bowel, ascending and transverse colon distended with air in forty-eight hours after birth. After the examining finger demonstrated no obstruction in the rectum a barium filling was made with a constricted area showing between air and barium-filled colon at the left pelvic brim. The accurate location of the obstruction before operating upon these infants is a very comforting finding. I am convinced, too, that giving barium

by rectum should be done with a small enough rectal point so that barium may escape and prevent undue pressure. One has only to handle these small, thin, friable-walled bowels to appreciate how easily they are torn. Aside from its diagnostic value, barium is a handicap to subsequent therapeutic procedures and it is doubtful if it should be used in these infants except as an opaque enema and for diagnosis in pyloric obstruction.

The use of a preliminary colostomy in this type of case seems to me to be a good practice. In the presence of adequate mobility, in another case of this type I would use the McGraw rubber band necrosis colo-colostomy procedure at the time of the original operation. It facilitates the desired continuity of bowel. It gives added stability of union and is quickly done. It marks the bottom of your septum which you can pinch off as soon as conditions warrant and you can close your colostomy also correspondingly sooner.

### Summary

The case of a newborn infant with congenital stricture of the first part of the sigmoid has been presented. The exact point of obstruction was demarcated by roentgenogram studies. The surgical problems arising in the handling of the tiny colon of an infant are described as they were successfully solved in this case.

### References

1. Duckett, J. W.: Intestinal obstruction in the newborn. *Ann. Surg.*, 116:321-333, (Sept.) 1942.
2. Duncan, P. A., Wearn, F. S., Jackson, H. F., and Waldron, W. S.: Successful surgical treatment of multiple atresia (aplasias) of small intestine in premature infant.
3. Wangensteen, O. H.: Cause and prevention of stomal obstruction and gastrojejunostomy. *Brunn, Med.-Surg. Trib.*, 551-562, 1942.

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### MORE DOCTORS FOR THE NAVY

The Navy urgently needs more doctors.

While one might think that with the war half won there would be little need for additional enlistments, this does not apply to the Navy. With the end of the conflict in the Pacific not in sight and additions being made to the Navy almost daily, additional doctors are needed. Each naval engagement, even though a victory, requires more medical service.

In order to meet this need, physical requirements for Navy medical officers have been greatly reduced. The Bureau of Naval Personnel has authorized a review of all former applicants wherever there is a possible chance of acceptance. This includes a large group of rejec-

tions based not only on questions of weight, height, color vision, and dental defects, but also such hitherto non-waivable conditions as asymptomatic, peptic ulcer, sacro-iliac strain, history of asthma, and several others. Even graduates of unapproved medical schools are encouraged to apply. Doctors who have been declared essential by Procurement and Assignment Committees may appeal their classification with a good chance of being reclassified.

Information regarding various types of duties to which medical officers are assigned and other information may be obtained by writing Lieutenant C. J. Radl, Office of Naval Officer Procurement, Bureau of Naval Personnel, Minneapolis 2, Minnesota.

# CLINICAL-PATHOLOGICAL CONFERENCE

## RENAL RICKETS

R. E. NUTTING, M.D., and ARTHUR H. WELLS, M.D.

Duluth, Minnesota

DR. A. H. WELLS: Chronic renal insufficiency in children occasionally results in serious developmental defects. These have given rise to a variety of clinical expressions including renal rickets, renal dwarfism, renal infantilism and renal osteitis fibrosa cystica depending on the outstanding manifestations of the individual case. The same pathogenic factors are probably active in long-standing chronic renal decompensation in adults but the organic bony changes are not so dramatic. We will present two cases of renal rickets with necropsy examinations and give a brief discussion of the facts and theories surrounding this subject.

### Case Report

DR. R. E. NUTTING: The case I wish to present was under close medical supervision from birth until the time of death at two and one-half years. The father and mother were living and well. There were two sisters, one aged nine years and one aged six; each had a marked orthostatic albuminuria.

The patient, a premature male infant, weighing 6 pounds, 9 ounces at birth, appeared normal in all respects until six weeks of age. At that time there was vomiting and difficulty with feeding. Excessive thirst and frequent urination were noted by the mother. Bone changes which were thought to be due to ordinary nutritional rickets, soon developed and growth was retarded. When seven months of age he was treated in the hospital (St. Mary's) for suspected pylorospasm because of persistent vomiting. He weighed 10.5 pounds at this time and his development was recorded as that of an infant three months of age. Four urine specimens showed a trace of albumin and three pus cells per high power field. The white blood cell count was 17,000 and the red blood cell count was 3,700,000. He had developed a grade III rachitic rosary, a distinct Harrison's groove, swellings of the wrists (Fig. 1) and knees typical of infantile rickets and had a remarkably square head. All of the usual anti-rachitic measures were employed, with no particular success. It was not until he was thirteen months of age that he sat up unsupported. The first tooth erupted at fourteen months. There were periods of continued vomiting.

At two years of age he weighed 16 pounds, 5 ounces, and measured only 28.5 inches in height. He was just beginning to walk. Mentally he was apparently normal. On one occasion at this age he had a slight elevation of temperature. Urinalysis showed 2 plus albumin and 1 plus pus. The urine specific gravity

was fixed at 1.009. The red blood cell count was 3,100,000. Alkalies were prescribed and the following day severe tetany developed. The blood calcium was 8 mgs. per cent and the phosphorous was 3.9 mgs. per cent. The tetany was relieved promptly by the

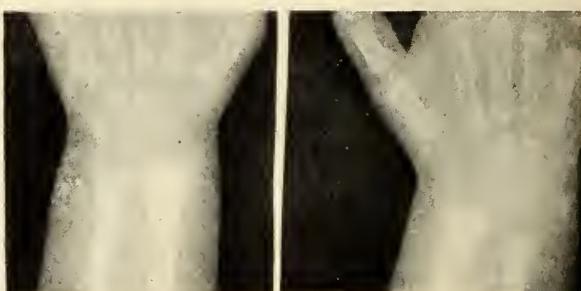


Fig. 1

administration of calcium chloride. A peculiar brownish pigmentation of the skin was evident. A progressive anemia required blood transfusions. His blood pressure was 80/50. Renal rickets was suspected for the first time. The blood urea was found to be 128 mgs. per cent, the blood creatinine was 2.8 mgs. per cent. The phenolsulphonephthalein test was 1 per cent in 2 hours. On a nephritic diet, with the institution of "sugar days," the blood urea was reduced to 90 mgs. per cent.

He died at the age of two and one-half years. His maximum weight was 18 pounds, and his height, shortly before death, was 29.5 inches, a weight and height commensurate with an age of between nine and ten months. The terminal illness was of three days' duration and characterized by general inanition, air hunger and coma. There were no convulsions.

### Autopsy

DR. A. H. WELLS: Dr. Nutting was permitted to perform a postmortem examination limited to a study of the urinary tract. Essential findings were those of the stunted growth and rachitic deformities seen before death and a remarkable congenital deformity of the kidneys, pelvi, ureters, and urinary bladder (Fig. 2). Each kidney was aplastic and weighed but 9 grams, or something less than one-fifth of the normal weight for the child's age. There was severe hydronephrosis bilaterally with extensive atrophy of the parenchymal tissue. Normal fetal lobulations remained on the outer

From the Duluth Pediatrics Society, O. W. Rowe, President, and St. Luke's Hospital, Arthur H. Wells, Pathologist.

surfaces. Both ureters were dilated throughout their length, and ranged from 1 to 3 cm. in diameter. The right ureter was particularly tortuous and irregularly dilated. There was no constriction at the vesicle wall and no valves could be found in the urethra. The uri-

general run-down condition she was given a series of ultraviolet treatments and general therapeutic measures to build up her strength. At thirteen years of age or six years before her death she was brought to me complaining primarily of periodic pains in the knees



Fig. 2

nary bladder was dilated to approximately 5 cm. in diameter and had moderately hypertrophied walls. Microscopically, there was an extensive atrophy and disappearance of tubules with extensive interstitial fibrosis and moderate lymphocytic infiltration. Glomeruli appeared decidedly reduced in numbers and were frequently fibrotic. It was concluded that there was a serious congenital defect of kidneys and urinary tract, with a superimposed chronic pyelonephritis resulting in sufficient renal destruction to cause the clinically observed death by uremia. The parathyroids and pituitary were not examined.

#### Case Report

**DR. R. H. PUUMALA:** I would like to report another case of renal rickets. This eleven-year-old white girl first visited me just eight years before her death. It was learned that she had had a complete extrophy of the bladder at birth. At the age of six, Dr. William Peyton of the University of Minnesota had transplanted her ureters into the colon in three stages with resection of the urinary bladder. Routine laboratory studies and blood urea and creatinine were normal at the time of the operation. She appeared to me to be suffering from recurring attacks of pyelitis and because of her



Fig. 3

and a recent appearance and gradual progression of knock-knees. She had been suffering from about three attacks of pyelitis a year. At this time she had a blood pressure of 186/140, her height was 52 inches and weight 57 pounds. The average normal height for her age was 58.2 inches and her weight should have been 88 pounds. Her physical examination was otherwise essentially normal excepting for a marked genu valgum. There was an old scar over the pubic region with considerable deformity primarily the result of a congenitally missing segment of the pubic bone and an old scar resulting from the operation for extrophy of the bladder. Her white blood cell count was 7,900 and her hemoglobin was 12.5 grams. My clinical impression was renal rickets with genu valgum, hypertension and retarded adolescence. About nine months later she returned with a blood pressure of 184/120. The genu valgum was the same and she had lost some weight. She had had lens corrections for her glasses twice during the year. Three months later her blood pressure was 170/124, pulse 130 and temperature 103° F. There was abdominal distention. Her white blood cell count was 15,050. The physical examination being otherwise negative it was concluded that she was suffering from a recurrence of her pyelitis. An x-ray examination of her knee (Fig. 3) revealed fuzzy margins of epiphyseal lines of the tibia and femur adjacent to the knee similar to those of rickets. She began menstruating at sixteen years.

After a long interval she returned for further medical care, eleven days before her death. She was obviously seriously ill with urineferous odor to her breath, blood pressure of 280/160, and albuminuric retinitis. She had developed a sore throat, cough, night sweats and tightness in the chest. Her temperature was normal. She also had much distention of the abdomen with belching and severe nausea. Three days before her death she had become very weak and stuporous and

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finally died in coma. Her parents constantly refused hospitalization and blood chemical studies were not to be had.

### Autopsy

The postmortem examination performed by myself in Cloquet, Minnesota, revealed a poorly developed and poorly nourished eighteen-year-old girl measuring 60 inches and weighing approximately 95 pounds. There was uremic frost under the eyes. A rachitic rosary was noted on both sides of the chest and there was a Harrison's groove of prominent proportions. The defect and surgical scar was noted over the pubic area. A small vaginal orifice was found an unusual distance posteriorly just anterior to the anus. There was a severe bilateral genu valgum. Subcutaneous fat was scanty. The peritoneal cavity had numerous diffuse fibrous adhesions throughout and there was a moderate distention of the intestines with yellowish watery fecal matter. The uterus and adnexa were atrophic. There was considerable hypertrophy of the heart, but otherwise the major organs had no significant disease process, excepting for evidence of toxic changes. The urinary bladder was missing. The parathyroids and pituitary glands were not examined. The kidneys and ureters were turned over to Dr. Wells for examination.

DR. A. H. WELLS: The right kidney was reduced to a rather thin, pale, fibrous shell with a moderate hydronephrosis and dilatation of calices. This kidney weighed 35 grams and its capsule was closely adherent and difficult to remove. It did not contain purulent matter. The ureter was moderately dilated and its walls thickened down to the entrance into the colon. There was no sharp change in size at any level. The left kidney weighed 140 grams. It was remarkably pale, somewhat flabby and the architectural markings were very poorly defined. There was no dilatation of its pelvis or ureter. The lower ends of both ureters had been transplanted into the sigmoid, about 30 cm. apart. Each were buried in the gut wall for a distance of about 6 cm. before entering the lumen. There was no unusual fibrosis about the ureters in the gut wall and no significant inflammatory change visible at their orifices. Microscopically both kidneys had a severe diffuse fibrosis and lymphocytic infiltration (chronic pyelonephritis).

### Discussion

DR. A. H. WELLS: The great confusion injected into the literature<sup>2,5,8,11,12</sup> on renal rickets and its allied clinical terms is probably the result of not clearly separating the known pathologic facts from the many theories of pathogenesis. There is no question in the minds of authorities on this subject that any one of many chronic kidney and urinary tract diseases can cause a prolonged renal decompensation and thereby result in well-defined osteoporotic, rachitis, dwarfing and hyposexual manifestations. How chronic renal failure produces these changes is where the authorities disagree.

A wide variety of congenital anomalies of the kidneys and urinary tract form the largest group<sup>4</sup> leading to renal rickets. This must be the result of several

factors: (1) the frequency of these defects in children; (2) the likelihood of prolonged renal failure before death, and (3) these patients are in the proper age group to develop the structural bony changes. Chronic glomerulonephritis, polycystic disease, pyelonephritis, and congenital atrophic changes have been frequently described in the kidneys of renal rachitics.

The parathyroid glands, when described, are generally remarkably hypertrophied<sup>6</sup>, totaling as much as 11 grams.<sup>8</sup> No such consistent change has been described in the pituitary. The blood phosphorous tends to be normal or high while the blood calcium is generally low or normal. The blood phosphatase is typically elevated. Lime salt deposits in lungs, artery walls, stomach, kidneys and other soft tissues are occasionally described. The bone changes are of two principal types: (1) rachitic and (2) osteoporotic. The former type has the same proliferative and degenerative changes in the epiphyseal cartilage with distortions in shape as seen in infantile rickets. The latter type has bone resorption, interstitial fibrosis, and even cystic changes almost identical to those found in osteitis fibrosa cystica.<sup>9</sup> The rachitic and dwarfing changes are limited to growing children. The osteoporotic effects have been described in adults<sup>2</sup> with chronic renal failure.

The adolescent may not only show the structural bony deformities as the result of chronic renal failure but may also have varying degrees of retardation of sexual development similar to our second case.

There are logical, although debatable explanations of the osteoporotic and rachitic bone changes. One theory expressed frequently is that the chronic retention of phosphates (along with other urinary products) results in a stimulus to greater parathyroid activity in an effort to force the excretion of phosphates. This is one of the functions of these glands. There results a work hypertrophy of the parathyroids. The extra parathyroid hormone is thought to cause osteoporosis as it does in hyperparathyroidism. Disturbed blood calcium and phosphorous relationships may be important factors in the rachitic deformities and dwarfism. The constant acidosis accompanying renal failure may interfere with the normal calcium phosphorous metabolism and bone development. Whether the pituitary plays some part in the process is debated. It may well have something to do with delayed sexual development.

DR. R. E. NUTTING: The clinical recognition of renal rickets is not difficult if the condition is considered in the differential diagnosis of all cases of late rickets, dwarfism, genu valgum, and retarded structural or sexual development. It is evident that the degree of these side effects of chronic renal insufficiency is directly proportional to the speed of growth of the bones (youth), and the duration and severity of the renal decompensation. In adult life there remains only rare instances of osteoporosis as evidence of the process.

The difficulty of recognition during the first few years of life will remain an outstanding diagnostic problem as illustrated in my case. Feeding problems, persistent vomiting, and poor development may well be attributed to the more common causes of these symptoms in infancy. The proof of renal inadequacy is

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always available when thought of through the laboratory tests of phenolsulphonephthalein excretion, urea clearance, fixation of specific gravity tests and blood urea and creatinine. As in many cases of chronic nephritis in adults the urine sediment and albumin determinations may not be of much aid. Parsons<sup>10</sup> describes three well defined groups of x-ray appearances: (1) the atrophic; (2) the florid type which is much like florid rickets; and (3) the woolly, stippled or honeycomb type which appears to be characteristic for renal rickets and quite unlike infantile rickets.

The second important problem in differential diagnosis may occur in long-standing cases of primary hyperparathyroidism in which calcium deposits in the kidneys have interfered with their function. Here the sequence of development of the disease should not be evidenced by the presence of renal failure for years. The blood calcium is typically high and the phosphorous low in primary hyperparathyroidism and they tend to be reversed in renal rickets. However, these criteria are not always reliable. Solitary bone cysts greatly favor the former. Finally a surgical exploration will nearly always reveal a single enlarged parathyroid in hyperparathyroidism while in renal rickets all four glands are typically enlarged.

Intractable hypophosphatemic rickets with renal glycosuria and acidosis, the Fanconi syndrome, may well be closely related to so-called renal rickets.<sup>3,7</sup> More thorough clinical and postmortem studies of this rare syndrome are necessary. The possible inter-relation-

ships with pituitary activity must receive further consideration.

The only curative procedure lies in the possible surgical relief of some obstructive congenital anomaly. The earliest possible recognition of renal rickets and careful x-ray study of the urinary tract are indicated before irreversible damage of the kidneys have resulted from hydronephrosis and pyelonephritis.

### References

1. Albright, F., Drake, T., and Sulkowitch, H. W.: Cited by Park and Eliot.<sup>9</sup>
2. Borrelli, Frank J., and Green, George C.: Renal rickets—a case report. *Urol. & Cut. Rev.*, 49:213-215, (April) 1945.
3. Boyd, J. D., and Stearns, G.: Late rickets resembling the Fanconi syndrome. *Am. J. Dis. Child.*, 61:1012-1022, (May) 1941.
4. Ellis, A., and Evans, H.: Renal dwarfism, report of twenty cases with special reference to its association with certain dilatations of urinary tract. *Quart. J. Med.*, 2:231-254, (April) 1933.
5. Howard, T. L.: Renal rickets or renal dwarfism. *Am. J. Surg.*, 40:323-348, (May) 1938.
6. McCullagh, E. P., and Proudfoot, W. L.: Renal rickets—report of a case. *Cleveland Clinic Quart.*, 10:19-28, (Jan.) 1943.
7. McCune, D. J., Mason, H. H., and Clarke, H. T.: Intractable hypophosphatemic rickets with renal glycosuria and acidosis (The Fanconi syndrome). *Am. J. Dis. Child.*, 65:81-146, (Jan.) 1943.
8. Moehlig, R. C.: Renal dwarfism or renal rickets. *Am. J. Roent.*, 50:582-601, (Nov.) 1943.
9. Park, E. A., and Eliot, M. M.: Renal hyperparathyroidism with osteoporosis (osteitis) fibrosa cystica. Vol. 3, Chap. 29 in Practice of Pediatrics—Brennemann, Hagerstown, Md.: W. F. Prior Co., Inc.
10. Parsons, L. G.: Bone changes occurring in renal and coeliac infantilism and their relationship to rickets, coeliac rickets. *Arch. Dis. Childhood*, 2:198-211, (Aug.) 1927.
11. Roberts, J. F.: Renal dwarfism—a case report. *Ann. Int. Med.*, 9:1729-1736, (June) 1936.
12. Schown, B., and Lee, Margaret: Renal rickets and dwarfism as a pituitary disease. *Am. J. Dis. Child.*, 53:117-127, (Jan.) 1937.

## BRITAIN'S PLAN FOR MATERNITY SERVICE

Dr. Nicholson J. Eastman comments on the British Plan for a National Maternity Service as follows: "It would be no exaggeration to say that the body of knowledge which a general practitioner should have at his disposal today is twice that necessary just a few decades ago. Thus, in obstetrics, he should have gained a passing acquaintance at least with countless new facts and techniques, from the Rh factor to x-ray pelvimetry.

"The increase in knowledge in other fields has possibly been even greater. To expect the average busy practitioner to assimilate and utilize all this and hence be almost a specialist in all fields is wishful thinking. Yet in isolated homes and without adequate equipment, he is asked to attend all alone every type of obstetric case. Nineteen times out of twenty, everything terminates happily. But now and then he is faced with a complication of such gravity that the skill of the most expert obstetrician in the best equipped maternity hospital would be taxed.

"This is the type of case that ultimately comes before the local maternal mortality committee and is called 'preventable.' It might well have been prevented had facilities been available with immediate consultation with an obstetric specialist and an immediate transfer of the patient to a modern maternity hospital. 'The

present system often places general practitioners in impossible situations,' says the report—a statement even more true in this country than in England, because a larger percentage of American women are attended by general practitioners.

"The general practitioner must be supported—not in any haphazard manner as at present, in free consultation with another general practitioner—but by a pre-arranged plan which provides for immediate consultation when necessary with a specialist and speedy transportation of the patient to a maternity hospital. State and county medical societies, as well as state and county public officials, should look into the possibility of working out such a plan."

Dr. Eastman believes that no woman in labor should be more than fifty miles from a well-equipped obstetric hospital unit with a specialist in attendance. "In this country, as well as in Britain, there is reason for believing that better organization of our resources would yield significant results in terms of lowered maternal and fetal mortality rates."

"Report on a National Maternity Service," a Digest with Comment, by Dr. Nicholson J. Eastman, Baltimore, Maryland, 1944.—*Maternity Briefs*.

## HISTORY OF MEDICINE IN MINNESOTA

### HISTORY OF MEDICINE IN GOODHUE COUNTY

#### Biographical Dictionary

(Continued from May issue)

**George Leininger** graduated from the Wooster Medical School in 1881 and the next year he opened an office with J. C. Sundberg in Red Wing. In 1881 he became a member of the Goodhue County Medical Society. In 1885 he bought the sanitarium which had been previously run by A. L. Clum. He was a member of the Minnesota State Medical Association but left Red Wing to establish himself in Chicago in 1886.

**Ragnvald Leland** was born in Norway in 1865 and educated at the University of Oslo. In 1888 he came to the United States, studied medicine at the University of Minnesota and was graduated in 1895. He moved to Kenyon shortly afterwards and practiced there until his death April 28, 1936. Dr. Leland had two hobbies outside the practice of his profession, music and languages, and excelled in both. He was a man of wide interests and general culture.

**Ottul K. Lindboe** was born in Norway in 1851, graduated from the Rush Medical College in 1877 and came to Zumbrota the same year. Later he practiced at Red Wing and served as a county physician. In 1886 he moved to Cannon Falls.

**N. J. Lund** came to Goodhue about 1875.

**M. Magelssen** was born in Christiania, Norway, in 1852 of an old and honored family. His father held the position of police governor of the middle-western portion of Norway. After finishing an academic course at the Royal University of Christiania he took a seven-year regular medical course at the University of Norway, graduating in 1877. He first practiced in London. After traveling through Europe he came to the United States where he stayed in Albert Lea for three years before moving to Red Wing in 1885. In 1887 or 1888 he moved to Fergus Falls. In 1895 he died of pneumonia, after a brief illness.

**Peter Magstad** practiced in Goodhue County for a short time in the early eighties. In 1883 he became a member of the Goodhue County Medical Society. The same year he left for Iowa and, becoming insane, was taken to Chicago.

**P. H. Manion**, a graduate of Rush Medical College, shared an office with P. E. Jones of Red Wing in 1890.

**H. L. McKinstry** graduated from the University of Pennsylvania in 1870. He established himself in Zumbrota in 1875. In 1887 he was appointed surgeon in the Third Minnesota Regiment and the next year moved to Red Wing. He was elected in 1881 to the Goodhue County Medical Society and later served as president of the organization (1885). He was a member of the Red Wing Board of Health, served as alderman in Red Wing in 1892 and was later appointed as surgeon for the Fifteenth Minnesota Regiment.

**C. N. Nelson** first made his appearance in Goodhue County in the early

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eighties and practiced there for a number of years. Though a doctor of medicine, he is said to have engaged in unethical practice.

**Wm. M. Newhall** studied with P. E. Jones of Red Wing and, in 1883, started a practice in partnership with the latter. He became a member of the Goodhue County Medical Society in 1883 and left two years later to establish himself in Minneapolis.

**Ole Olson** practiced near Leon, Goodhue County, in the fifties.

**Geo. H. Overholt** was born in 1842, graduated from the Albany Medical College in 1866 and, ten years later, established himself in Kenyon as a physician, surgeon and obstetrician, remaining there until 1891.

**J. A. Palmer** graduated from the University of Michigan and located in Red Wing in 1890.

**E. S. Park** was born in Mount Pleasant, Pennsylvania, in 1811. He studied under his father, Dr. Asa Park, and later graduated from the Pittsfield, Massachusetts, Medical School. In 1858 he went to Iowa and in July, 1862, moved to Red Wing. He was a charter member of the Goodhue County Medical Society. He held the offices of coroner and city physician, and continued to practice until he was sixty-one years old. He died in February, 1888, as a result of a disease from which he is said to have suffered for seventeen years.

— **Raymond** came to Red Wing in 1879 and the same year became a member of the Minnesota State Medical Association.

— **Richmond** came to Cannon Falls about 1873.

**J. H. Sandberg** came to Red Wing about 1878 and practiced there until 1887 when he moved to Minneapolis. He was a member of the Goodhue County Medical Society and served as medical director of the Minnesota Scandinavian Relief Association. His greatest interest lay in the natural sciences and he enjoyed a wide reputation for his large and unusual collections of the flora of Minnesota and the Northwest. He sent a collection of 6,000 botanical specimens, gathered during one summer, to the University of Sweden and received specimens in exchange from Norway, Sweden, France, Germany, Britain, Bohemia and other countries. He gathered geological and ornithological collections, also. In 1884 he organized the Ornithological Society of Red Wing and served as its secretary and treasurer. In 1885 he was elected a member of the Linnae Botanical Society of Sweden. After his removal to Minneapolis he taught in the department of agriculture at the University and apparently gave up the practice of medicine. In 1891 he was invited to accompany the government Alaskan expedition as botanist to make a collection for the Smithsonian Institution. Unfortunately he was unable to accept this invitation but he was subsequently engaged to make a collection of Minnesota fauna and flora for the government.

**H. P. Sawyer** was born in 1870 and went to Goodhue in 1895.

**H. L. Scheide**, a graduate of the Medical College of Ohio (1886), was for a time partner of P. E. Jones before moving to Eisdale, Wisconsin.

**E. T. Sedgwick**, an eclectic physician, received his medical degree in 1877, coming to Goodhue County the same year.

**E. A. Shannon** received his degree in 1886 from the St. Paul Medical College. He was a member of the Goodhue County Medical Society and served as secretary in 1886. He left Red Wing two years later to go to St. Paul and then to Watertown, Renville County.

— **Shattuck** practiced in Zumbrota in the early '60's.

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**Douglas A. Shiley**, a member of the State Medical Association (1876), was a partner of W. W. Sweney from 1873 until 1876, when he left to establish himself in Iowa.

**T. G. Simon** was a member of the Minnesota State Medical Association (1886).

**Grace Gardiner Smith**, wife of Myron W. Smith, graduated from the medical school of Boston University in 1895 and came with her husband to Red Wing in 1899. She was, for some time, president of the Board of Health, and has served as director of the local Red Cross since its organization in 1917.

**Myron W. Smith** graduated in medicine from Boston University in 1895. After three years of practice at Oil City, Pennsylvania, he came with his wife, Grace Gardiner Smith, also a physician and classmate in medical school, to settle in Red Wing. There he is still in active practice. Dr. Smith has served as president of the Goodhue County Medical Society, of the State Sanitary Conference and of the Mineral Springs Sanatorium Commission. He is a designated physician for the Veterans Administration and served for seventeen years as medical director at the Minnesota State Training School for Boys. Also he has been a member of the Board of Education. He served as captain in the U. S. Army Medical Corps in World War I and, later, as president of the Soldiers' Memorial Association; he was instrumental in securing for Red Wing, the scenic Memorial Park located on a high bluff in the center of the city.

**Aaron Marshall Stephens**, a homeopath, graduated from the Hahnemann Medical College in Chicago in 1884 and came to Red Wing the same year. (See the Olmsted-Houston-Fillmore Dodge Society History.)

**S. Stringer** practiced under an exemption certificate in Cannon Falls during the eighties.

**J. C. Sundberg**, who was born in Norway, opened an office in Red Wing with George Leininger in 1882. He was a member of the Goodhue County Medical Society. In 1883 he moved to Washington territory.

**W. M. Sweney**, the son of the pioneer doctor, W. W. Sweney, of Red Wing, was born in 1849. He attended the Bellevue Hospital Medical College and graduated in 1876. The same year he began to practice in Red Wing with his father. He was a member of the Goodhue County Medical Society and in 1877 became a member of the Minnesota State Medical Association. In 1880 he married Delia Drew of Red Wing. In various emergencies he served as city health commissioner and as coroner. For a number of years he ran a drug store. He was a member of the State Fish Commission and was very much interested in ornithology.

**William Wilson Sweney** was born in Pennsylvania in 1818. Moving to Fulton County, Illinois, when he was eighteen years old, he studied medicine with Dr. Abram Hull. Later he attended Rush Medical College and graduated from that institution in 1850. The same year, with his wife and family, he moved to Saint Paul. He remained there for a short time and, the next year, moved to the future site of the town of Red Wing where he became, so far as known, the first white settler. During this time he made friends with his Indian neighbors giving his professional services freely and receiving, in return, their lasting respect. With the rapid influx of settlers he soon established a successful practice. His life as a scholar, philanthropist, physician, and as a man, was closely identified with the community.

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until his death. He was a charter member of the Goodhue County Medical Society and the first president of that organization. He was active in the State Medical Association from its reorganization in 1869, and served as its president in 1873. He was a charter member and permanent vice president of the Old Settlers' Association founded in 1869. He was also a charter member of the Phenix Hook and Ladder Company of Red Wing, served on the public and normal school boards and was a member of the city council. In 1857 he was elected a member of the Territorial Legislature.

Doctor Sweney wrote several essays on climatology and diseases of Minnesota. In 1870 the State Medical Association offered two prizes; one for the best article written on "Epidemics and Endemics of Minnesota," and the other for the best contribution to "Cerebro-Spinal Meningitis." Both of these were won by Doctor Sweney who contributed the money to a "prize fund" for the organization.

Outside his profession his interests lay in the natural sciences, particularly geology and botany. He was a great lover of nature, and fishing was one of his favorite pastimes. He was also interested in the mythology and traditions of the American Indian.

As regards politics he was a "states rights" Democrat, although not a disunionist. Recoiling from an appearance of cant in any and every form, his religion appeared to be one of noble living rather than of professing. His life came to an end in 1882. All places of business were closed on the afternoon of his funeral and the people who attended the rites—members of the medical profession from all parts of the state, representatives of many organizations and citizens of all classes and ages—comprised the largest number ever assembled on a like occasion in the history of Red Wing. The following paragraph we quote from an obituary in *The Advance* for August 16, 1882:

"While in every field and in every department a good and true man, it was in his profession and in its incidents that the highest mead of praise is due to his memory. Always courteous and gentle, always self-possessed and cautious, always intelligently discriminating and skillful, always ignoring self and thinking only of others, he drew the hearts of all, the old and the young, the 'old settler,' and the recent immigrant, the rich and the poor, the scholar and the unlearned, so that as this sad blow falls upon us, all mourn his loss, as a friend, as if he had been to each of us one of our own family circle. Singularly diffident and retiring, he possessed qualities of both head and heart lying far back out of sight that none other than his most intimate friends fully understood or appreciated."

**H. Taylor** was born in Toronto, Canada, and studied there before entering the Medical College of Ohio to make a special study of surgery. In 1883 he came to Red Wing because of poor health, having previously held the chair of surgery and also served as professor of anatomy at an Indiana medical college.

**Marcus Thrane** practiced in Red Wing in 1896 and then left for Lac qui Parle.

**T. N. Thoreson** received his medical degree from the Royal University of Christiania, Norway. He came to Red Wing about 1897 and in 1898 was chosen as surgeon for the Viking regiment. Later he returned to Norway and served as ship doctor.

**J. E. Tibbets** was born in New Hampshire in 1812. He had acquired a

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practical knowledge of pharmacy before he studied medicine in Maine. Later he graduated from the Bowdoin Medical College. After practicing in Maine, Tennessee and Louisiana, he came to Minnesota and settled in Cannon Falls in 1856, where he remained a well-loved and influential citizen for many years. He was a facile diagnostician and a successful physician. In 1871 he became a member of the State Medical Association. The last few years of his life he was an invalid, being confined to his bed most of the time. He left Cannon Falls for Stillwater when illness obliged him to retire from practice and he died there in 1882.

**C. P. Tigerhjelm** came to Goodhue County about 1870.

**Salem Town** came to Goodhue County in March, 1869. He was a charter member of the Goodhue County Medical Society and its first recording secretary.

**Knud Troldhouse** practiced in Goodhue County in 1878-1879.

**W. G. N. Tupper**, a graduate of the University of Michigan, located in Zumbrota (1871) and then in Red Wing (1874). In 1886 he left for Little Falls to practice there with his son, but returned in a short time to Red Wing and Zumbrota. He was a member of the State Medical Association. His death occurred in 1890.

**A. L. Turner** came to Red Wing about 1890.

**J. F. A. Twetan** practiced in Red Wing from about 1879 to 1882.

**C. E. Ware** came to Red Wing in 1874 from Owatonna.

**George C. Wellner**, born in Bavaria in 1849, was physician to the North Star Dispensary before coming to Red Wing in 1875. He was president of the Red Wing Board of Health, secretary of the board of U. S. Examining Physicians, a member of the pension board, a member of the Goodhue County Medical Society and its president in 1907. He spent a number of years practicing in Wabasha, returning to Red Wing in 1883 and again in 1893. He died at the age of eighty-four at his home in Minneapolis.

**H. M. Wheeler** practiced in Goodhue County about 1881.

**K. B. Wilkinson** practiced in Goodhue County about 1875.

**C. E. Wing** of Kenyon served as county physician in 1891.

**W. M. Winklemann**, according to his card, a physician, surgeon and dentist, came to Red Wing in 1863.

**N. A. Winslow** practiced in Red Wing about 1886.

**E. J. Winston** was born in Utica, New York, in 1839 and came with his parents to Cherry Grove, Goodhue County in 1856. He attended Wasioja Seminary and studied medicine at the University of Michigan. He returned to Cherry Grove and practiced medicine there until his death in 1932.

**A. P. Woodward**, thought to have been a homeopath, came to Pine Island about 1863, remaining until he moved to Cannon Falls in 1883.

**I. E. Wright** located in Red Wing in 1862.

# President's Letter

## Post-Meeting Observations

The recent meeting of the House of Delegates, as was freely forecast, gave priority to the prepayment medical service plan corporation now possible for Minnesota with the enabling act passed by the last legislature.

The greatest confidence was expressed in the leadership of Dr. A. W. Adson and his committee, who had underwritten voluminous detailed work in amassing informative material to expedite the culmination of this significant epoch in Minnesota medicine.

The delegates voted to establish a representative directorate that will get down to work on developing the methods and mechanisms whereby the people of our State may join in retaining medical control at the State level.

In the meantime, it must not be assumed that this whole problem is settled. This is only the beginning. The profession is entirely cognizant of the heavy responsibilities it is accepting, a fact which is being courageously faced at the outset. Fortunately, other states, notably Michigan, have pioneered in the field and from a careful study of their accumulated experiences, informed and judicious conclusions can be arrived at to insure sound and orderly development.

There is general agreement that a limited (catastrophic illness) plan should be initiated before wider coverage is ventured. Logic supports this limited protection as the type which would be most urgently desired by the public, since it provides for "catastrophic" health situations—the surgical cases which most commonly run to heavy expense. Then, as experience accumulates, this service can spread its wings and safely embark on broader coverage.

Dr. L. A. Buie's report to the delegates on the Association's finances, indicates soundness in investments and good husbanding of reserves.

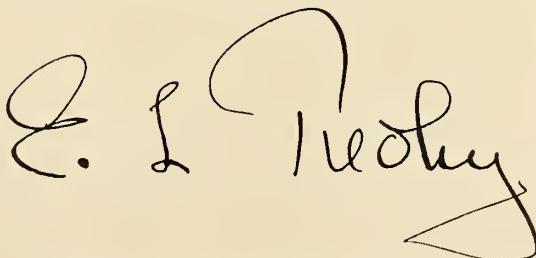
## Broadened Medical Education Planning Needed

There is a definite need at the present time for mobilizing all our educational and teaching facilities in the development of internships, residencies and fellowships; also, postgraduate or refresher courses designed to meet the needs of the returning medical officer as well as those in civilian practice to keep abreast of the times in medical practice and avoid obsolescence.

An analysis of questionnaires returned by medical officers in the service provides much authoritative information on which to gauge intelligent planning for the future.

Physicians in civilian practice have been compelled to enlarge their field of activity and to refresh their knowledge of the intricacies of modern diagnosis and treatment. The necessity for continuation courses of study in the medical specialties has never been more urgent than at the present time.

To implement this broadened educational program, there has been, and must necessarily continue to be, a decided drift toward closer co-operation and greater correlation between the medical profession and the hospital. This calls for the highest form of medical staff organization based upon the full utilization of the teaching capacities of these institutions. In the final analysis, the success of the hospital as an educational medium will be dependent on the co-operation of the medical staff and the willingness and ability of individual physicians to carry the added burden of teaching as their contribution to medical education and the future of American medicine.



President, Minnesota State Medical Association.

# ♦ Editorial ♦

CARL B. DRAKE, M.D., *Editor*; GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

## NATIONAL MEDICAL SOCIETY

SOME members of the profession have received invitations to join the newly formed National Medical Society. In this invitation is found the following: "No system of medicine can honestly call itself complete or sufficient without giving due recognition to these time-tried branches of the healing art (referring to homeopaths, eclectics, osteopaths, and naturopaths). The society holds a special appeal to members of the so-called 'regular' or allopathic school of medical thought who, while recognizing the invaluable contribution to medical science made by old-line medicine through the universities, colleges, and research foundations, find themselves unable to accept the arbitrary monopolistic, and oppressive leadership of the A.M.A." Copies of the *Journal of the National Medical Society*, which is evidently a quarterly journal, have also reached the desks of members.

We note in an editorial message from one Hans Zimmerman, M.D., which appeared in the April number of the *Journal of the National Medical Society*, the statement that "Allopathy, homeopathy, eclecticism, osteopathy, and naturopathy—each has its place in the field of medicine." Naturopathy has its place, but apparently not chiropractic.

According to the by-laws of the National Medical Society, which appeared in the April number of the society's journal, "Regular members shall be holders of the degree of doctor of medicine \* \* \* \* and to osteopathic and naturopathic physicians who hold a full medical license."

According to this issue of the *Journal of the National Medical Society*, Indiana was the first state to receive a State Chapter License, and California is to be second, with Ohio, Michigan, Tennessee, Pennsylvania, and New York as prospective charter recipients. A copy of a letter from Hans Zimmerman, M.D., Executive Secretary, to a Congressman also appears in this issue, urging an investigation of the "notoriously arbitrary menace to health and medical progress—impeding activities of the A.M.A." We wonder just

how the 80,000 or more physicians of the country who make up the American Medical Association are impeding medical progress.

The following information has been received regarding Hans Zimmerman, M.D. The American Medical Association has no record of his having obtained an M.D. degree. *The Chicago Tribune* is said to have referred to him in its August 20, 1943, issue as a naturopathic physician. Further, according to the Illinois Department of Registration and Education, Dr. Zimmerman was found guilty March 2, 1945, on three counts of practicing medicine without a license, and was fined \$100 and costs. Enough said.

## "COMBINED" IMMUNIZATION AGAINST DIPHTHERIA, PERTUSSIS AND TETANUS

THE protective benefit derived from active immunization against some infectious diseases is now well accepted by the medical profession and even by a majority of the general public. It was shown by Ramon in 1939 that simplification of techniques might make multiple immunization possible and thus more attractive to the public. Since the immunologic pattern of the diphtheria bacillus and the tetanus bacillus is similar, the mixing of their toxoids was a logical step in this direction and the "combined" antigen of diphtheria-tetanus is of course now well accepted. Its use seems important when one considers that the number of deaths from tetanus in Minnesota during the past decade equalled that from diphtheria.

Daughtry-Denmark, in 1942, demonstrated the "excellent possibilities for the giving of three immunizations in one" but emphasized the need of a high pertussis organism count in these mixtures whether they were fluid or alum-precipitated. Serum titrations to demonstrate adequate levels of antitoxin response against diphtheria and tetanus; complement fixation, agglutination tests and field trials to evaluate protection against

pertussis have been reported by Hamilton, Saito, Miller, Lapin, Sauer, Kendrick, Jones and others.

Although some controversy persists with respect to the advantages of one preparation over another, the optimum time of administration and the dosage to be employed, it seems justified to state that antigenic mixtures are probably here to stay.

Diphtheria-pertussis-tetanus vaccine in the fluid, the aluminum-hydroxide-adsorbed or the alum-precipitated form, probably merits general usage.

ERLING S. PLATOU, M.D.

### STATE HOUSE OF DELEGATES—1945

**A**LTHOUGH our State Medical Association was unable to hold its annual scientific convention for the first time in many years, the organizational activities of the Association, which are conducted throughout each year, did not suffer, as demonstrated by the meeting of the House of Delegates held May 19 and 20, 1945, in St. Paul.

The reports of the officers and committees of the Association were submitted as usual in recent years to the delegates in advance of the meeting and were given serious consideration by the various reference committees of the House of Delegates, immediately preceding the meeting.

The Association has had many important matters requiring the consideration of some of the committees and the Council, which acts as an interim committee for the House of Delegates. The office of the Association has been kept very busy handling the work which was particularly heavy due to the legislature's being in session. The office lost during the year the services of Mrs. Florence Fitzgerald, who has been invaluable for many years in the field of public relations, and Miss Irene Sanders, who will be difficult to replace.

The outstanding achievement of the year was the passage of an Enabling Act sponsored by the Association providing for the formation of a non-profit corporation by twenty-one or more doctors which may provide medical care on a prepaid basis. The need for such a state-wide organization has been felt for some years, and several other state medical associations have led the way.

The House of Delegates felt obligated to form such a corporation which will be independent of the Association but whose Board of Directors will be made up of two physicians from each of the nine Councillor Districts and three at large. The first meeting of the Directors is scheduled for June 17. The Committee on Sickness Insurance, the name of which has been changed to the Committee on Medical Care, under the chairmanship of Dr. A. W. Adson and with the assistance of Mr. F. Manley Brist, is to be congratulated on its efforts which entailed the study of enabling acts and prepayment plans already in operation in other states. The new corporation merits the support of all the members of the Association.

Another important activity of the Association the past year has been the appraisal of the future medical and hospital needs of the counties of the State by the medical advisory committees of the county medical societies under the auspices of the Postwar Planning Committee of the Association created by the Council in December, 1943. This survey is nearing completion and is of first importance in meeting the medical needs of many counties which have suffered during the war from lack of physicians and in determining what localities are in greatest need of hospitals.

Dr. Justus Ohage, president of the Ramsey County Medical Society, presided at the banquet which was well attended. Our president, Dr. E. L. Tuohy of Duluth, addressed the banqueters in his inimitable manner on several matters of interest to the profession. Dr. Emmet L. Manson, a dentist of Worthington, told in a most interesting manner of his experiences as a prisoner of war in Luzon.

Dr. Edwin J. Simons, Swanville, was elected president and will succeed Dr. Edward L. Tuohy, of Duluth, on January 1, 1946. Other officers elected were: first vice president, Dr. Max Albers, St. Paul; second vice president, Dr. W. C. Chambers, Blue Earth; secretary, Dr. B. B. Souter, St. Paul; treasurer, Dr. A. H. Condit, Minneapolis; speaker and vice speaker of the house, respectively, Dr. W. A. Coventry, Duluth, and Dr. C. G. Sheppard, Hutchinson. Drs. A. E. Sohmer, Mankato, A. E. Cardle, Minneapolis, W. W. Will, Bertha, and W. L. Burnap, Fergus Falls, were elected councillors for the fourth, sixth, seventh, and eighth districts, in order named.

# MEDICAL ECONOMICS

Edited by the Committee on Medical Economics  
of the

Minnesota State Medical Association

George Earl, M.D., Chairman

## MEDICAL SERVICE PLAN CORPORATION AUTHORIZED

The House of Delegates at its Saint Paul meeting May 19 and 20 went speedily about the business of authorizing and setting into motion the machinery for creating a statewide voluntary nonprofit medical service corporation.

Without a dissenting voice, the recommendations brought before the delegates by the chairman of the reference committee considering medical economic reports, were favorably acted upon, although the method of selecting the twenty-one incorporators, to serve as the original board of directors of the corporation, came in for considerable discussion before it was finally settled.

In explanation of the provision for twenty-one incorporators, the Chairman of the Committee on Medical Service (formerly Committee on Sickness Insurance) told the delegates that not only geographical representation of the profession was considered desirable but representation of the various specialties as well, and that the arbitrary number of twenty-one was deemed necessary to provide both—two physicians from each councilor district plus three at large, the latter to be selected by the eighteen members representing the councilor districts.

It is to be noted that specific procedures were left entirely in the hands of this Board which has set June 17 as the date of its first meeting.

Authorization was given the Board to proceed with preparation of articles of incorporation and to formulate specific, detailed plans after careful study of existing models, notably that provided by Michigan, as well as other states. Stipulation was made by the delegates, however, that all deliberations and decisions of this board of directors be referred back to a special session of the House of Delegates at some later date before final action is taken.

## Far-reaching Decisions to Be Made

The whole problem is a complex one and should be approached with a realistic concept of what such a corporation can and cannot do. Fortunately, such enlightenment is available through the experience of medical plans elsewhere, many of which the incorporators undoubtedly will investigate and study before any decisions are reached.

Whether the Minnesota Medical Service plan will be co-ordinated with the Blue Cross, as is the case in Michigan, or whether some commercial sickness and accident insurance company will participate in the venture is a question for the board of directors to decide.

Be that as it may, universal experience of medical care plans demonstrate that no plan, at least in the beginning, can undertake to offer complete coverage. This may well be the ultimate goal, but a goal which must be approached cautiously and with proper regard for adequate reserves, definite experience and careful underwriting.

As demonstrated by the plans which have enjoyed the greatest success, only hospitalized surgical and obstetrical care are recommended to subscribers initially. Then, as a second step, medical care in the hospital may be added later. It is only recently that Michigan, after an early disastrous experience in this matter, has considered itself sufficiently secure and experienced to experiment with complete medical care.

## No One Plan Is a Cure-all

In this connection, a brief quotation from a recent talk by Mr. Harlan S. Don Carlos, representative of one of the largest insurance companies in the country is interesting. Said Mr. Carlos:

"There are millions of individual policies in force covering accident, sickness, hospital and surgical care."

We think it important that this perspective be constantly in mind, and we suggest that proponents of the various other plans often lose this perspective in urging some one plan as the cure-all. Such overestimates only serve to give the public a confused, kaleidoscopic set of impressions which make it difficult to gain public support for a properly balanced set of plans supplementing each other in solution of this complicated problem of medical care in its entirety."

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### **PRIVATE HEALTH INSURANCE UNDERWRITERS ACTIVE**

In the face of the flood of proposals for compulsory health insurance legislation, American health-accident insurance underwriters are redoubling their efforts to develop a private health insurance program that will, they hope, offset any need for a government-sponsored plan. A clear-cut battle plan has already been drawn up by the major health-accident underwriters, most of whom see in the federal health insurance plan a direct threat to free enterprise in all forms of insurance, as well as to the business that brought them well over three hundred fifty million dollars in premiums last year.

The principal points of defense against federal encroachment, as indicated by current activities of established health-accident companies seems to be:

1. Adoption of uniform medical coverage contracts for nationwide use in insuring both groups and individuals.
2. Adoption of standard contracts of insurance, and insurance to be offered in conjunction with state or local medical societies.
3. Inclusion in such contracts of health benefits equal or superior to those contemplated in government plans, but at lower-than-federal cost to individuals, and available to both employer and employee in group coverage.
4. Development of the support of, and a close working interest with the medical profession, business and labor.
5. A spearheading by insurance companies of an educational program to widen health insurance coverage and encourage fuller use of America's medical facilities and resources.

A Health and Accident Underwriters Conference Committee, representing a group of 128 companies and benefit associations writing health and protection throughout the United States, has

been extremely active investigating medical care insurance problems prior to making recommendations as to underwriting and claim procedure and rate calculations.

That there is much to be done in the matter of pruning down acquisition or administration costs under commercial coverage is demonstrated by the fact that this often runs 50 per cent or higher on the premium dollar. Michigan doctors, on the other hand, point with pride to the fact that the service they are offering to the public in that state has an administrative cost of only 11.4 per cent. It is interesting to note that in England the panel system under government control has an overhead better than 80 per cent.

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### **EMIC PROGRAM DISCUSSED AGAIN**

Two features of the Emergency Maternal and Infants Care Program, which have been a bone of contention between Minnesota doctors and the Children's Bureau at Washington since the inception of the program, were brought again before the House of Delegates this year.

One of these was the section relating to the services of a specialist, and the other, the one defining medical consultants under the program.

The director of the program in Minnesota reported to the delegates that the latest attempt made March 28, 1945, to reconcile federal requirements with conditions existing in Minnesota as approved by the Council of the Minnesota State Medical Association with respect to the definition of a consultant, had been rejected by the Children's Bureau.

Specific recommendations for establishing a medical consultation service under the program in Minnesota, to be administered by the Minnesota Department of Health and the Minnesota State Medical Association with the assistance of the Medical Advisory Committee, were presented to the delegates.

### **A Year and a Half of EMIC**

Statistics released recently by Dr. Viktor Wilson, director of the program in Minnesota, show that since July 6, 1943, when the first case was reported, through December 31 of last year over 15,500 applications have been received. While in the first year the federal government extended only \$710,785 for patients under the program, this was augmented during the twelve-month period preceding January 1, 1945, to \$1,052,920.

## CORRESPONDENCE

That few applicants are transient patients, is borne out by the fact that only 83 cases were completed before delivery in instances where residents moved out of the state or withdrew from the program. Thus out of a total of 5,161 maternity cases completed, 5,078 cases were completed after delivery.

Ninety-eight per cent of the maternity cases were attended by doctors of medicine; 98 per cent were delivered in hospitals. This compares with 84 per cent of the population as a whole who have hospital deliveries. The average number of hospital days was 9.4 per case. Total payments expended for all maternity services was \$427,542, or an average of \$82.84 per case. Medical doctors received \$174,079 for their services, or an average of \$34.25 per case, or 40.7 per cent of the total expenditure.

### Infant Cases Increasing

These statistics reveal that while infant cases were lower at the start of the program, there were more of these completed over this period than there were maternity cases, or a total of 6,423 infant cases as compared to 5,161 maternity cases. Total expenditure covering all infant services amounted to \$21,304, of which 29 per cent or \$6,153 was paid to physicians.

Estimating that there are some 8,000 infants in the state eligible for vaccination and immunization services under the program, it is anticipated that the infant case load will increase considerably in the next few months.

## CORRESPONDENCE

3 April 1945

R. P. Buckley,  
Secretary,  
St. Louis County Medical Society;

Dear Mr. Buckley:

I have seen four years of Army Service this month. For this reason I thought it might be interesting to you and the society to get sort of a recapitulation of these years.

I was practicing with Dr. B. S. Adams of Hibbing when I was called to active duty, on 15 April 1941. My first station was Camp J. T. Robinson, at Little Rock, Arkansas, where I worked in the Induction Station until June, 1942. At this time I was shifted into the Station Hospital. I worked there for six months in the Medical Department. My wards were divided between

pneumonia patients and those with arthritis. This short six months has been my only association with the practice of medicine since entering the Army.

In January, 1943, I was ordered into the field, where I was assigned to the 69th Medical Regiment, and placed in a Clearing Company. Though we have been redesignated since that time, I am still with that same company. From April until September, 1943, I maneuvered in Louisiana. The first part of this month we went out to the California desert, where we stayed until April, 1944. In April we were moved to a camp in Virginia, from where we were shipped overseas. Since being with a field unit, I have held every job in the company, from Supply Officer to Company Commander. At the present time I am S-3, or Plans and Training Officer.

It has not been all clear sailing physically for me since becoming a soldier. In 1942 I had two bad Strep. throats and an atypical pneumonia. Just before this I had appendicitis while visiting in North Carolina, and had my appendix out at the Duke Hospital.

In March of 1944 I had my most severe illness, an acute pyelonephritis, which had its onset with an obstruction of my right ureter. Being a medical officer, I was sent back to full duty when I was discharged from the hospital.

I was married in August, 1941, and now have two boys, aged two and one.

I am stationed in Germany right now. As you can imagine the people are not very friendly. I drove through Aachen the other day. We really took that city apart. As I drove down the street where most of the doctors had their offices, I noticed that only the walls were standing where the doctors used to see patients. The people in this district know who is winning the war.

Since coming overseas, I have been well fed and well taken care of. If you are wondering why you are having a food shortage, I can truthfully say that we are getting it.

I hope you can read between the lines of this note and see some of the problems that I will have when I am demobilized and come back to civilian life again. Obviously I cannot go back to school, for I have a family to raise now. I hope the State and County Medical Societies are thinking about these things, and planning how best to absorb these men who have been fighting all over the world to keep the States from the devastation I am seeing in France and Belgium and Germany. I hope you are not depending too much on the lessons you learned following the last war. This struggle is as different from that one as is possible, and I'm sure the postwar problems will also differ greatly. I've been in the Army now over twice as long as America was in the last war, and I may be in three or four times as long.

I often think of my period of practicing medicine in St. Louis County. Those were happy days, which I hope to repeat when I leave my present "position." I have many, many friends there.

Sincerely,  
ROBERT B. TUDOR  
Capt., MC.

MINNESOTA MEDICINE

# Minnesota Academy of Medicine

Meeting of January 4, 1945

The President, Daniel MacDonald, M.D., in the Chair

## SURGICAL PRACTICE IN THE SOUTHWEST PACIFIC

K. E. FRITZELL

Lieutenant Commander, Medical Corps, USNR

It is evident that surgical practice in tropical areas must be altered by numerous factors: temperature, humidity, fauna, geology, to name a few. The following miscellaneous and uncorrelated remarks are concerned largely with such practice in island bases of the Southwest Pacific, but some of the statements may well apply to similar climates removed from that particular theater.

Inasmuch as the staff of any hospital or dispensary may be closely concerned with the construction and maintenance of the physical plant in which it is to operate, a few random remarks about buildings and equipment can be correctly included in a discussion of the practice of surgery.

For instance, it will be necessary to provide, in the operating rooms, for adequate ventilation and at the same time to thoroughly screen all openings against the myriad insects present in all seasons. In spite of the usual screen wire of standard gauge many small insects will filter into the operating room at night and the repeated use of insecticide spray before and during operation will be necessary. Some of this nuisance may be eliminated by placing the source of general illumination outside the screened openings. Each operating room in a suite can be screened individually above head level.

In areas where the water has filtered through coral there is a high mineral content and it is feasible and profitable to collect the more than adequate rain from the roof of the operating room, store it in a covered cistern and have at hand a supply which will not damage autoclaves and sterilizers and will not be subjected to interruption from enemy action or errant bulldozers.

There are a number of peculiarities of surgical diseases which crop up in the areas concerned. For instance, the use of ether as an anesthetic becomes extremely difficult because of the rapid volatilization and one may find it more expedient to use chloroform as a substitute.

One must be prepared for the sudden appearance of chills and fever of malarial origin. They may appear at any time, sometimes a most disconcerting occurrence in the postoperative state. Routine smears for parasites are done on all incoming patients, but a negative smear may not assure that a break-through will not occur, particularly with the added burden of operation; this in spite of atabrine prophylaxis in some cases.

Fluid balance is harder to maintain in the tropics than in temperate zones. Even in normal subjects the insensible loss is high, the urine concentrated. In burns, for instance, the fluid loss incident to trauma, plus that due to sweating which may be increased by heavy compression dressings, will make hydration and the maintenance of satisfactory hematocrit readings difficult.

Dehydration in otherwise normal men will increase the hardness of stool and as a consequence thrombosed hemorrhoids and anal fissures frequently are found.

Certain surgical diseases may be altered, or present in odd forms. Lymphangitis may appear without a distal lesion to explain it and one must keep in mind the fact that filariasis in its early stage may be the cause. Furthermore, an apparent severe lymphangitis is seen after certain insect bites.

Centipede stings, while they do not cause lymphangitis, are extremely painful, requiring morphine in half-grain doses plus complete rest and packing of the affected area in ice. Even then vomiting and chills and fever may persist.

In patients who are sensitive to fungus, mycotic infection of skin may serve as a frequent site for secondary invaders and by its very presence make the application of a cast or large dressings a problem.

Tinea cruris may be a deterrent to elective procedures on the perineum and groins.

The chronic slowly healing ulcers of the leg so frequently encountered are the cause of long periods of disability and a challenge to treatment. These usually begin as an insect bite or appear after trivial injuries. This is the source I am sure of the frequently heard remark, "Things don't heal down here." As a matter of fact there is no increase in the breakdown of clean operative wounds.

My impression is that peripheral neuritis is seen more often in military and naval patients in the tropics than elsewhere. This is not due to pressure dressings or the like, nor is it reasonable to suppose that it is indicative of deficiency in diet. At any rate the general diet is adequate in all respects.

The surgeon himself will probably be victim of a most annoying condition, namely prickly heat. It appears on all those areas of the body covered by gown and gloves.

Yaws appears infrequently in whites but the disease must be kept in mind when examining an ulcer. I have seen one primary lesion in a white medical officer who had been conducting a clinic for natives.

Tuberculosis is common in the native population and there is a high incidence of renal calculus in blacks and Tonkinese.

## MINNEAPOLIS SURGICAL SOCIETY

However, such annoyances as the fact that plaster casts never dry and must be made almost twice as heavy as would be necessary in other latitudes do not prevent adequate surgical procedures and practices being carried out.

### RECONDITIONING

**W. G. Guthrie**  
**Colonel, Medical Corps**

The following brief remarks relative to the reconditioning program as conducted in the Army are made in explanation and prior to the showing of the reconditioning film, which is self-explanatory, and demonstrates the execution of the program in detail.

The recognition of the value of reconditioning has been one of the major developments in the field of surgery in this war. The term "reconditioning" covers the care of the patient from the time of his operation or illness until he is physically fit to return to duty.

The purpose of the program is the return to duty of service personnel recovered from disease or injury in the best possible physical and mental condition. It is not enough for the medical officer to aid and promote healing. There is also the need to restore physical health and full vigor and to foster the mental toughness so essential to effective duty.

To achieve this objective, it has been found necessary to have a well ordered program which includes four important elements: (1) physical reconditioning, (2) educational reconditioning, (3) occupational therapy, and (4) recreation. To accomplish this purpose and for ease in administrative handling of reconditioning, four classes of patients are established:

Class I comprises that group nearest the point of recovery. Daily physical training should enable them to engage in an eight-hour activities program that will fit them to pass a physical fitness test and carry out a fifteen-mile hike before return to duty.

Class II is composed of those capable of six hours

of physical training to include calisthenics, drills, marches, outdoor fatigue and athletic sports.

Class III are ambulant hospital patients still receiving treatment which is paramount. They may be divided into groups for medically supervised exercises according to anatomical limitations such as upper and lower extremity, abdominal, and special cases. Frequent rest periods will be essential in this group of patients.

Class IV consists of those patients considered convalescent but still bed cases or confined to the ward.

The basic program for Classes III and IV is high in educational pursuits and low in physical training. As convalescence progresses the educational training diminishes and the physical training increases. Reconditioning begins for Class III and IV patients while still in the hospital ward. It is important to introduce the program just as soon as convalescence begins.

The physical training during the hospital ward phase consists of the following: (1) Physical therapy; (2) heliotherapy; (3) medically supervised exercises; (4) limited exercises under supervision out of doors adjacent to the wards for those who are able; (5) recreational games such as ping-pong, table games, playing catch, horseshoes, et cetera; (6) ward fatigue; (7) occupational therapy.

The educational program consists of interesting, helpful and informative talks and discussions; later, lectures and demonstrations at central points. Two or more hours daily are used for classes in military instruction, training films, and in general education.

Class I and II patients are segregated in separate ward buildings and wherever possible in detached buildings or units. These patients are subject to regular military discipline and wear duty uniforms.

The intensive application of the reconditioning program has proven that: (1) men are released from the hospital physically fit for full duty; (2) their admissions to the hospitals have been reduced; (3) the period of convalescence has been shortened in certain cases of acute communicable disease; (4) the necessity for sick leave has been largely eliminated; (5) moral and fighting spirit has been improved.

ERNEST R. ANDERSON, M.D., *Recorder.*

### V-E DAY MEANS BIGGER TASK FOR ARMY MEDICAL DEPARTMENT

The ending of hostilities in Europe means that the doctors, nurses, technicians and other personnel who comprise the Army Medical Department will now begin an even bigger job than they have been doing which means there is no immediate prospect for the general release of personnel, Major General Norman T. Kirk, The Surgeon General, declared on V-E Day.

The Medical Department, he pointed out, not only must continue to care for the sick and wounded, but must make immediate preparations for the redeployment of troops to the Pacific or this country.

One of the biggest tasks will be to give physical examinations to some 3,500,000 soldiers before they leave

Europe. In addition, a goal of ninety days has been set in which to evacuate the sick and wounded from the European Theater to this country. Then there will be the final matter of redeploying the Medical Department personnel and equipment.

Soldiers whose condition necessitates a medical discharge will be given further treatment and necessary examinations in the United States. All soldiers, prior to discharge from the service, will be screened for tuberculosis, syphilis and other diseases, and for possible strains and other physical defects. Thus hospitals here will probably be operating at capacity with a critical need for medical personnel for many months to come.

# Minnesota State Medical Association—Roster 1945

## OFFICERS

E. L. TUOHY, M.D.	<i>President</i>	Duluth
S. A. SLATER, M.D.	<i>First Vice President</i>	Worthington
J. A. BARGEN, M.D.	<i>Second Vice President</i>	Rochester
B. B. SOUSTER, M.D.	<i>Secretary</i>	Saint Paul
W. H. CONDIT, M.D.	<i>Treasurer</i>	Minneapolis
E. M. JONES, M.D.	<i>Past President</i>	Saint Paul
W. W. WILL, M.D.	<i>Speaker, House of Delegates</i>	Bertha
E. A. MEYERDING, M.D.	<i>Vice Speaker, House of Delegates</i>	Saint Paul
R. R. ROSELL	<i>Executive Secretary</i>	Saint Paul

## COUNCILORS\*

<b>First District</b>	
L. A. BUIE, M.D. (1947)	Rochester
<b>Second District</b>	
L. L. SOGGE, M.D. (1947)	Windom
<b>Third District</b>	
C. M. JOHNSON, M.D. (1946)	Dawson
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R. M. EPPARD, M.D.	Cloquet
E. O. HANSON, M.D.	Cloquet
J. K. BUTLER, M.D.	Carlton

## CARVER COUNTY

M. B. HEBEISEN, M.D.	Chaska
H. D. NAGEL, M.D.	Waconia
B. H. SIMONS, M.D.	Chaska

## CASS COUNTY

O. F. RINGLE, M.D.	Walker
G. H. ADKINS, M.D.	Pine River
Z. E. HOUSE, M.D.	Cass Lake

## CHIPPEWA COUNTY

L. G. SMITH, M.D.	Montevideo
M. A. BURNS, M.D.	Milan
H. A. ROUST, M.D.	Montevideo

## CHISAGO COUNTY

J. E. HALPIN, M.D.	Rush City
A. E. HOLMES, M.D.	Rush City
R. G. SWENSEN, M.D.	North Branch

## CLAY COUNTY

O. H. JOHNSON, M.D.	Moorhead
F. A. THYSELL, M.D.	Moorhead
S. B. SEITZ, M.D.	Barnesville

## CLEARWATER COUNTY

L. J. LARSON, M.D.	Bagley
R. D. DAVIS, M.D.	Clearbrook

## COTTONWOOD COUNTY

H. C. STRATTE, M.D.	Windom
E. S. SCHUTZ, M.D.	Mountain Lake
J. V. CARLSON, M.D.	Westbrook

## CROW WING COUNTY

V. E. QUANSTROM, M.D.	Brainerd
G. I. BADEAUX, M.D.	Brainerd

## DAKOTA COUNTY

J. A. SANFORD, M.D.	Farmington
L. R. PECK, M.D.	Hastings
A. J. EDMOND, M.D.	Farmington

## DODGE COUNTY

C. E. BIGELOW, M.D.	Dodge Center
H. R. BAKER, M.D.	Hayfield
D. E. AFFELDT, M.D.	Kasson

## DOUGLAS COUNTY

G. W. CLIFFORD, M.D.	Alexandria
L. M. BOYD, M.D.	Alexandria
E. R. SATHER, M.D.	Alexandria

## FARIBAULT COUNTY

W. C. CHAMBERS, M.D.	Blue Earth
M. D. COOPER, M.D.	Winnebago
W. H. BARR, M.D.	Wells

## FILLMORE COUNTY

C. W. WOODRUFF, M.D.	Chatfield
J. E. WESTRUP, M.D.	Lanesboro
L. W. CLARK, M.D.	Spring Valley

## FREEBORN COUNTY

W. P. FRELIGH, M.D.	Albert Lea
B. A. LEOPARD, M.D.	Albert Lea
F. G. FOLKEN, M.D.	Albert Lea
D. L. DONOVAN, M.D.	Albert Lea

## GOODHUE COUNTY

W. W. LIFFRIG, M.D.	Red Wing
L. A. STEFFENS, M.D.	Red Wing
R. V. SHERMAN, M.D.	Red Wing

## GRANT COUNTY

L. R. PARSON, M.D.	Elbow Lake
E. T. REEVE, M.D.	Elbow Lake
A. M. RANDALL, M.D.	Ashby

## RURAL HENNEPIN COUNTY

T. J. DEVEREAUX, M.D.	Wayzata
M. H. SEIFERT, M.D.	Excelsior
F. J. KUCERA, M.D.	Hopkins

## HOUSTON COUNTY

J. W. HELLAND, M.D.	Spring Grove
G. T. NORRIS, M.D.	Caledonia
L. K. ONSGARD, M.D.	Houston

## HUBBARD COUNTY

W. W. HIGGS, M.D.	Park Rapids
L. H. HEDENSTROM, M.D.	Cambridge
W. T. NYGREN, M.D.	Braham

## ITASCA COUNTY

J. L. MCLEOD, M.D.	Grand Rapids
H. R. ANDERSON, M.D.	Deer River
E. K. ROWLES, M.D.	Coleraine

## JACKSON COUNTY

A. G. CHADBURN, M.D.	Heron Lake
W. S. HITCHINGS, M.D.	Lakefield
W. H. HALLORAN, M.D.	Jackson

## KANABEC COUNTY

C. S. BOSSERT, M.D.	Mora
W. F. NORDMAN, M.D.	Mora
R. J. RIPPLE, M.D.	New London

## KANDIYOHI COUNTY

J. C. JACOBS, M.D.	Willmar
B. J. BRANTON, M.D.	Willmar
R. J. RIPPLE, M.D.	New London

## KITTSON COUNTY

A. W. SHALEAN, M.D.	Hallock
F. F. STOCKING, M.D.	Hallock
A. S. BERLIN, M.D.	Hallock

## KOOCHICHING COUNTY

M. E. WITHROW, M.D.	International Falls
C. C. CRAIG, M.D.	International Falls
R. D. HANOVER, M.D.	Little Fork

## LAC QUI PARLE COUNTY

M. WESTBY, M.D.	Madison
C. M. JOHNSON, M.D.	Dawson
W. N. LEE, M.D.	Madison

## LAKE COUNTY

R. F. MUELLER, M.D.	Two Harbors
LE SUEUR COUNTY	
E. E. NOVAK, M.D.	New Prague

SWAN ERICSON, M.D.	LeSueur
R. A. CURTIS, M.D.	LeCenter

## LINCOLN COUNTY

A. L. VADHEIM, M.D.	Tyler
P. E. HERMANSON, M.D.	Hendricks
GEORGE FRIEDELL, M.D.	Ivanhoe

## LYON COUNTY

B. C. FORD, M.D.	Marshall
A. D. HOIDALE, M.D.	Tracy
E. T. SANDERSON, M.D.	Minneota

MINNESOTA MEDICINE

ROSTER 1945

**MAHNOMEN COUNTY**

J. J. EDERER, M.D.,	Mahnomen
K. W. COVEY, M.D.,	Mahnomen

**MARSHALL COUNTY**

C. H. HOLMSTROM, M.D.,	Warren
I. G. WILTROUT, M.D.,	Oslo
A. E. CARLSON, M.D.,	Warren

**MARTIN COUNTY**

R. C. HUNT, M.D.,	Fairmont
H. B. BAILEY, M.D.,	Fairmont
J. J. HEIMARK, M.D.,	Fairmont

**MCLEOD COUNTY**

H. H. HOLM, M.D.,	Glencoe
O. W. SCHOLPP, M.D.,	Hutchinson
E. W. LIPPMANN, M.D.,	Hutchinson

**MEEKER COUNTY**

K. A. DANIELSON, M.D.,	Litchfield
D. C. O'CONNOR, M.D.,	Eden Valley

**MILLE LACS COUNTY**

MELVIN VIK, M.D.,	Onamia
C. J. HENRY, M.D.,	Milaca

**MORRISON COUNTY**

A. M. WATSON, M.D.,	Royalton
A. E. AMUNDSEN, M.D.,	Little Falls
E. J. SIMONS, M.D.,	Swanville

**MOWER COUNTY**

R. S. HEGGE, M.D.,	Austin
C. L. SHEEDY, M.D.,	Austin
L. G. FLANAGAN, M.D.,	Austin

**MURRAY COUNTY**

L. A. WILLIAMS, M.D.,	Slayton
B. M. STEVENSON, M.D.,	Fulda
R. F. PIERSON, M.D.,	Slayton

**NICOLLET COUNTY**

F. P. STRATHERN, M.D.,	St. Peter
H. J. NILSON, M.D.,	North Mankato

**NOBLES COUNTY**

J. D. WALLER, M.D.,	Wilmeton
B. O. MORK, SR., M.D.,	Worthington
E. A. KILBRIDE, M.D.,	Worthington

**NORMAN COUNTY**

ESKL ERICKSON, M.D.,	Halstad
THEODORE LOKEN, M.D.,	Ada

**OLMSTED COUNTY**

J. M. BERKMAN, M.D.,	Rochester
F. D. SMITH, M.D.,	Rochester
C. B. MCKAIG, M.D.,	Pine Island

**OTTER TAIL COUNTY**

A. J. LEWIS, M.D.,	Henning
W. L. BURNAP, M.D.,	Fergus Falls
G. C. JACOBS, M.D.,	Fergus Falls

**PENNINGTON COUNTY**

O. F. MELLBY, M.D.,	Thief River Falls
O. G. LYNDÉ, M.D.,	Thief River Falls
H. K. HELSETH, M.D.,	Thief River Falls

**PINE COUNTY**

C. G. KELSEY, M.D.,	Hinckley
MANUEL BROWNSTONE, M.D.,	Sandstone

**PIPESTONE COUNTY**

W. G. BENJAMIN, M.D.,	Pipestone
H. DEBOER, M.D.,	Edgerton
J. G. LOHMAN, M.D.,	Pipestone

**POLK COUNTY**

C. L. OPPEGAARD, M.D.,	Crookston
J. F. NORMAN, M.D.,	Crookston
ABRAHAM SHEDLOV, M.D.,	Fosston

**POPE COUNTY**

E. A. EBERLIN, M.D.,	Glenwood
B. I. McIVER, M.D.,	Lowry

**RED LAKE COUNTY**

F. M. PETKEVICH, M.D.,	Red Lake Falls
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**REDWOOD COUNTY**

T. E. FLINN, M.D.,	Redwood Falls
W. A. BRAND, M.D.,	Redwood Falls
G. B. EAVES, M.D.,	Wabasso

**RENVILLE COUNTY**

J. DORDAL, M.D.,	Sacred Heart
A. M. FAWCETT, M.D.,	Renville
R. E. ERICKSON, M.D.,	Hector
J. A. COSGRIFF, M.D.,	Olivia

ROSTER 1945

**RICE COUNTY**

F. R. HUXLEY, M.D.,	Faribault
D. W. FRANCIS, M.D.,	Morrstown
WARREN WILSON, M.D.,	Northfield

**ROCK COUNTY**

C. L. SHERMAN, M.D.,	Luverne
C. O. WRIGHT, M.D.,	Luverne
F. W. BOFENKAMP, M.D.,	Luverne

**ROSEAU COUNTY**

J. L. DELMORE, M.D.,	Roseau
N. M. LEITCH, M.D.,	Warroad
D. O. BERGE, M.D.,	Roseau

**ST. LOUIS COUNTY**

A. G. ATHENS, M.D.,	Duluth
P. G. BOMAN, M.D.,	Duluth
R. B. BRAY, M.D.,	Biwbik

**SCOTT COUNTY**

H. M. JURGENS, M.D.,	Belle Plaine
B. F. PEARSON, M.D.,	Shakopee

**SHERBURNE COUNTY**

A. B. ROEHLKE, M.D.,	Elk River
E. F. CLOTHIER, M.D.,	Elk River
GORDON H. TESCH, M.D.,	Elk River

**SIBLEY COUNTY**

ROLF HOVDE, M.D.,	Winthrop
THOMAS MARTIN, M.D.,	Arlington
D. C. OLSON, M.D.,	Gaylord

**STEARN'S COUNTY**

A. H. ZACHMAN, M.D.,	Melrose
C. F. BRIGHAM, M.D.,	St. Cloud
W. T. WENNER, M.D.,	St. Cloud

**STEELE COUNTY**

D. E. MOREHEAD, M.D.,	Owatonna
E. J. NELSON, M.D.,	Owatonna
D. H. DEWEY, M.D.,	Owatonna

**STEVENS COUNTY**

E. T. FITZGERALD, M.D.,	Morris
M. L. RANSOM, M.D.,	Hancock

**SWIFT COUNTY**

HANS JOHNSON, M.D.,	Kerkhoven
C. L. SCOFIELD, M.D.,	Benson
E. J. KAUFMAN, M.D.,	Appleton

**TODD COUNTY**

M. E. MOSBY, M.D.,	Long Prairie
J. M. COOK, M.D.,	Staples
E. J. SIMONS, M.D.,	Swanville

**TRAVERSE COUNTY**

N. F. DOLEMAN, M.D.,	Tintah
A. L. LINDBERG, M.D.,	Wheaton

**WABASHA COUNTY**

B. J. BOUQUET, M.D.,	Wabasha
R. A. GLABE, M.D.,	Plainview
W. F. WILSON, M.D.,	Lake City

**WADENA COUNTY**

L. T. DAVIS, M.D.,	Wadena
H. G. BOSLAND, M.D.,	Verndale
C. H. PIERCE, M.D.,	Wadena

**WASECA COUNTY**

O. J. SWENSON, M.D.,	Waseca
H. M. MCINTIRE, M.D.,	Waseca
B. J. GALLAGHER, M.D.,	Waseca

**WASHINGTON COUNTY**

W. R. HUMPHREY, M.D.,	Stillwater
J. W. STUHR, M.D.,	Stillwater
C. H. SHERMAN, M.D.,	Bayport

**WATONWAN COUNTY**

O. E. HAGEN, M.D.,	Butterfield
F. L. BRETEL, M.D.,	St. James

**WILKIN COUNTY**

W. E. WRAY, M.D.,	Campbell
E. W. RIMER, M.D.,	Breckenridge

**WINONA COUNTY**

R. H. WILSON, M.D.,	Winona
R. B. TWEEDY, M.D.,	Winona

**WRIGHT COUNTY**

T. J. CATLIN, M.D.,	Buffalo
L. H. BENDIX, M.D.,	Annandale
R. D. THIELEN, M.D.,	St. Michael

**YELLOW MEDICINE COUNTY**

R. H. KATH, M.D.,	Wood Lake
M. I. HAUGE, M.D.,	Clarkfield
P. G. SCHMIDT, JR., M.D.,	Granite Falls

(No committees have been appointed in the following counties: Cook and Lake of the Woods.)

**Woman's Auxiliary**  
to the  
**Minnesota State Medical Association**

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MRS. J. A. THABES, SR.....	<i>Second Vice President</i> .....	Brainerd
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MRS. E. L. TUOHY.....	<i>Fourth Vice President</i> .....	Duluth
MRS. E. W. MILLER.....	<i>Recording Secretary</i> .....	Anoka
MRS. HARRY KLEIN.....	<i>Corresponding Secretary</i> .....	Duluth
MRS. H. F. FLANAGAN.....	<i>Treasurer</i> .....	Saint Paul
MRS. J. A. COSGRIFF.....	<i>Auditor</i> .....	Olivia
MRS. O. B. FESENMAIER.....	<i>Historian</i> .....	New Ulm
MRS. J. S. REYNOLDS.....	<i>Parliamentarian</i> .....	Minneapolis

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Bulletin—MRS. M. G. GILLESPIE.....	Duluth	Program—MRS. M. E. RYAN.....	Saint Paul
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Organization—MRS. E. V. GOLTZ.....	Saint Paul		

**District Councilors**

**DISTRICT NO. 1**

L. A. BUIE, M.D..... Rochester  
Counties—Dodge, Fillmore, Freeborn, Goodhue,  
Houston, Mower, Olmsted, Rice, Steele, Wabasha,  
Winona.

**DISTRICT NO. 2**

L. L. SOGGE, M.D..... Windom  
Counties—Cottonwood, Faribault, Jackson, Martin,  
Murray, Nobles, Pipestone, Rock, Watonwan.

**DISTRICT NO. 3**

C. M. JOHNSON, M.D..... Dawson  
Counties—Big Stone, Brown, Chippewa, Kandiyohi,  
Lac Qui Parle, Lincoln, Lyon, Meeker, Pope, Red-  
wood, Stevens, Swift, Traverse, Yellow Medicine.

**DISTRICT NO. 4**

A. E. SOHMER, M.D..... Mankato  
Counties—Blue Earth, Carver, Le Sueur, McLeod,  
Nicollet, Renville, Scott, Sibley, Waseca.

**DISTRICT NO. 5**

E. M. HAMMES, M.D..... Saint Paul  
Counties—Anoka, Chisago, Dakota, Isanti, Kanabec,  
Mille Lacs, Pine, Ramsey, Sherburne, Washington.

**DISTRICT NO. 6**

A. E. CARDLE, M.D..... Minneapolis  
Counties—Hennepin, Wright

**DISTRICT NO. 7**

E. J. SIMONS, M.D..... Swanville  
Counties—Aitkin, Beltrami, Benton, Cass, Clearwater,  
Crow Wing, Hubbard, Koochiching, Morrison,  
Stearns, Todd, Wadena.

**DISTRICT NO. 8**

W. L. BURNAP, M.D..... Fergus Falls  
Counties—Becker, Clay, Douglas, Grant, Kittson,  
Lake of the Woods, Mahnomen, Marshall, Norman,  
Otter Tail, Pennington, Polk, Red Lake, Roseau,  
Wilkin.

**DISTRICT NO. 9**

F. J. ELIAS, M.D..... Duluth  
Counties—Carlton, Cook, Itasca, Lake, St. Louis.

# MINNESOTA STATE MEDICAL ASSOCIATION

## COUNTY SOCIETY ROSTER

**Key to Symbols:** \*Deceased; †Affiliate or Associate; §In Service; ★Died in Service.

### BLUE EARTH COUNTY MEDICAL SOCIETY

Regular meetings, last Monday of each month except June, July and August  
Annual meeting in December  
Number of Members: 35

President				Mickelson, J. C.	Mankato
Kemp, A. F.	Mankato			Miller, V. I.	Mankato
Secretary				Morgan, H. O.	Amboy
Schmitz, A. A.	Mankato			Penn, G. E.	Mankato
Andrews, R. N.	Mankato			†Samuelson, L. G.	Mankato
†Butzer, J. A.	Mankato			Schlesselman, J. T.	Mankato
Dahl, G. A.	Mankato			Schmidt, P. A.	Good Thunder
Denman, A. V.	Mankato			Schmitz, A. A.	Mankato
†Edwards, R. T.	Big Fork, Montana			Sohmer, A. E.	Mankato
Franchere, F. W.	Lake Crystal			Stillwell, W. C.	Mankato
Fugina, G. R.	Mankato			†Troost, H. B.	Mankato
				Vezina, J. C.	Mapleton
				Wentworth, A. J.	Mankato
				Williams, H. O.	Lake Crystal

### BLUE EARTH VALLEY MEDICAL SOCIETY

Faribault and Martin Counties  
Regular meetings, first Thursday of every other month  
Annual meeting, first Thursday in November  
Number of Members: 34

President				†MacMillan, D. G.	Triumph
Bergen, C. T.	Bricelyn			McGroarty, J. J.	Easton
Secretary				Mills, J. L.	Winnebago
Boysen, Herbert	Madelia			Parsons, R. L.	Monterey
Bailey, H. B.	Fairmont			Raymond, J. H.	Canby
†Bailey, R. B.	Fairmont			Rowe, W. H.	Fairmont
Barr, W. H.	Wells			Russ, H. H.	Blue Earth
Bergen, C. T.	Bricelyn			Sommer, A. W.	Elmore
*Blanchard, H. G.	Fairmont			†Sylfrud, H. W.	Bricelyn
Boysen, Herbert	Madelia			†Thayer, E. A.	Truman
Chambers, W. C.	Blue Earth			Vaughan, V. M.	Truman
Cooper, M. D.	Winnebago			†Virnig, M. P.	Wells
				Wilson, C. E.	Blue Earth
				Zemke, E. E.	Fairmont

### CAMP RELEASE DISTRICT MEDICAL SOCIETY

Chippewa, Lac Qui Parle and Yellow Medicine Counties  
Regular meetings monthly  
Annual meeting, December  
Number of Members: 28

President				Hauge, M. I.	Clarkfield
Hudec, E. R.	Echo			Holmberg, L. J.	Canby
Secretary				Hudec, E. R.	Echo
Boody, G. J., Jr.	Dawson			Johnson, C. M.	Dawson
Bergh, L. N.	Montevideo			†Johnson, V. M.	Dawson
Boody, G. J., Jr.	Dawson			†Jordan, Kathleen	Granite Falls
Borgerson, M. A.	Hanley Falls			Jordan, L. S.	Granite Falls
†Burns, F. M.	Milan			Kath, R. H.	Wood Lake
Burns, M. A.	Milan			Kaufman, W. C.	Appleton
Foshager, H. T.	Clara City			Kilbride, J. S.	Canby
				Lee, W. N.	Madison

### CLAY-BECKER COUNTY MEDICAL SOCIETY

Regular meetings quarterly  
Annual meeting, December  
Number of Members: 22

President				Ewbank, J. N.	Lake Park
Thysell, V. D.	Hawley			Gosslee, G. L.	Moorhead
Secretary				Hagen, O. J.	Moorhead
Simison, Carl	Barnesville			Haight, G. G.	Audubon
†Aborn, W. H.	Hawley			†Hendrickson, R. R.	Lake Park
Bottolfsen, B. T.	Moorhead			Humphrey, E. W.	Moorhead
Carman, J. E.	Detroit Lakes			†Ingebrigtsen, E. K. G.	Moorhead
Duncan, J. W.	Moorhead			Johnson, Olga H.	Moorhead
Ellington, A. R.	Detroit Lakes			Larson, Arnold	Detroit Lakes

### DAKOTA COUNTY MEDICAL SOCIETY

Number of Members, 10

President				Moberg, C. W.	Detroit Lakes
Emond, A. J.	Farmington			Otto, H. C.	Frazee
Secretary				†Rice, H. G.	Moorhead
Peck, L. R.	Hastings			Rutledge, L. H.	Detroit Lakes
				Seitz, S. B.	Barnesville
				†Shaw, H. A.	Lake Park
				Simison, Carl	Barnesville
				Thysell, F. A.	Moorhead
				Thysell, V. D.	Hawley

### EAST CENTRAL MINNESOTA MEDICAL SOCIETY

Anoka, Chisago, Isanti, Kanabec, Mille Lacs, Pine and Sherburne Counties  
Regular meetings January, March, May, July, September and November  
Annual meeting, December

Number of Members: 40

President				Callahan, F. F.	Ah-Gwah-Ching
Tesch, G. H.	Elk River			Clothier, E. F.	Elk River
Secretary				*Cooney, H. C.	Princeton
Roehlke, A. B.	Elk River			†Dedolph, T. H.	Minneapolis
Arends, A. L.	Jamestown, N. D.			Dredge, H. P.	Sandstone
Blomberg, W. R.	Princeton			Gray, R. C.	Minneapolis

## ROSTER 1945

Gully, R. J.....Cambridge  
 Halpin, J. E.....Rush City  
 Hedenstrom, L. H.....Cambridge  
 Holmes, A. E.....Rush City  
 Kelsey, C. G.....Hinckley  
 Miller, E. W.....Anoka  
 Mork, A. H.....Anoka  
 †Mork, F. E.....Anoka  
 Nordman, W. F.....Mora

President  
 Leopard, B. A.....Albert Lea  
 Secretary  
 Person, J. P.....Alden

Barr, L. C.....Albert Lea  
 †Branham, D. S.....Albert Lea  
 Butturff, C. R.....Freeborn  
 Calhoun, F. W.....Albert Lea

President  
 Williams, M. R.....Cannon Falls  
 Secretary  
 Brusegard, J. F.....Red Wing  
 Aanes, A. M.....Red Wing  
 Anderson, S. H.....Red Wing  
 †Baldigo, E. M.....Red Wing  
 Brusegard, J. F.....Red Wing  
 Clayton, H. F.....Red Wing

President  
 Anderson, J. K.....Minneapolis  
 Secretary  
 Jones, W. R.....Minneapolis

Executive Secretary  
 Mr. J. H. Baker.....Minneapolis

Aagaard, G. N., Jr.....Minneapolis  
 Abramson, Milton.....Minneapolis  
 Adkins, C. D.....Minneapolis  
 †Alexander, H. A.....Minneapolis  
 †Aling, C. A.....Minneapolis  
 Aling, C. P.....Minneapolis  
 Allen, H. W.....Minneapolis  
 Allison, R. G.....Minneapolis  
 Altnow, H. O.....Minneapolis  
 Andersen, A. G.....Minneapolis  
 Andersen, S. C.....Minneapolis  
 Anderson, D. D.....Minneapolis  
 †Anderson, E. D.....Minneapolis  
 Anderson, E. R.....Minneapolis  
 Anderson, F. J.....Minneapolis  
 Anderson, J. K.....Minneapolis  
 Anderson, K. W.....Minneapolis  
 Anderson, P. A.....Minneapolis  
 †Anderson, U. S.....Minneapolis  
 †Andreasen, E. C.....Minneapolis  
 Andresen, K. D.....Minneapolis  
 Andrews, R. S.....Minneapolis  
 Arey, S. L.....Minneapolis  
 †Arlander, C. E.....Minneapolis  
 Arling, L. S.....Minneapolis  
 †Arling, P. A.....Minneapolis  
 Arnold, Ann W.....Minneapolis  
 Arnold, D. C.....Minneapolis  
 Arvidson, C. G.....Minneapolis  
 Aune, Martin.....Minneapolis  
 Aurand, W. H.....Minneapolis

Baird, J. W.....Minneapolis  
 Baken, M. P.....Minneapolis  
 Baker, A. B.....Minneapolis  
 Baker, A. T.....Minneapolis  
 Baker, E. L.....Minneapolis  
 Baker, Looe.....Minneapolis  
 †Balkin, S. G.....Minneapolis  
 †Barber, J. P.....Minneapolis  
 †Barr, R. N.....St. Paul  
 Barron, Moses.....Minneapolis  
 \*Bass, G. W.....Minneapolis  
 Bateman, Olive A. L.....Minneapolis  
 Baxter, S. H.....Minneapolis

Nygren, W. T.....Braham  
 O'Hanlon, J. A.....Lindstrom  
 †Olson, L. M.....Chisago City  
 †Patterson, H. D.....Anoka  
 Petersen, P. C.....Braham  
 Peterson, C. A.....Chisago City  
 Roehlke, A. B.....Elk River  
 †Scherling, S. S.....Taylors Falls

Schlesselman, George.....Anoka  
 Spurzem, R. J.....Anoka  
 Stephan, E. I.....Hinckley  
 †Stratte, A. K.....Pine City  
 Swenson, R. G.....North Branch  
 Tesch, G. H.....Elk River  
 Vik, Melvin.....Onamia  
 †Whitney, R. A.....Cambridge

### FREEBORN COUNTY MEDICAL SOCIETY

Regular meetings, Quarterly

Annual meeting, December

Number of Members: 24

Donovan, D. L.....Albert Lea  
 Folken, F. G.....Albert Lea  
 Freeman, J. P.....Albert Lea  
 Freiligh, W. P.....Albert Lea  
 Gamble, J. W.....Albert Lea  
 Gamble, P. M.....Albert Lea  
 Gullixson, A.....Albert Lea  
 Kaasa, L. J.....Albert Lea  
 Kamp, B. A.....Albert Lea  
 Leopard, B. A.....Albert Lea

†Neel, H. B.....Albert Lea  
 †Nesheim, M. O.....Emmons  
 Palmer, C. F.....Albert Lea  
 Palmer, W. L.....Albert Lea  
 †Palmerton, E. S.....Albert Lea  
 Person, J. P.....Alden  
 †Prins, L. R.....Albert Lea  
 Schultz, J. A.....Albert Lea  
 Swanson, R. R.....Albert Lea  
 Whitson, S. A.....Albert Lea

### GOODHUE COUNTY MEDICAL SOCIETY

Regular meetings, none

Annual meeting, December

Number of Members: 22

Claydon, L. E.....Red Wing  
 Flom, M. G.....Zumbrota  
 †Graves, R. B.....Red Wing  
 †Hartnagel, G. F.....Red Wing  
 Hedin, R. F.....Red Wing  
 Johnson, A. E.....Red Wing  
 †Johnson, M. R.....Red Wing  
 Jones, A. W.....Red Wing  
 †Juers, E. H.....Red Wing

Kimmel, G. C.....Red Wing  
 Liffrig, W. W.....Red Wing  
 †Mack, J. J.....St. Louis, Mo.  
 McGuigan, H. T.....Red Wing  
 Sherman, R. V.....Red Wing  
 Smith, M. W.....Red Wing  
 Steffens, L. A.....Red Wing  
 \*Vaaler, T.....Cannon Falls  
 Williams, M. R.....Cannon Falls

### HENNEPIN COUNTY MEDICAL SOCIETY

Regular meetings, first Monday each month, October through May

Annual meeting, October

Number of Members: 693

Bayard, H. F.....Minneapolis  
 Beach, Northrop.....Minneapolis  
 †Beard, A. H.....Minneapolis  
 Becker, Arnetta M.....Minneapolis  
 †Beckman, W. G.....Minneapolis  
 Bedford, E. W.....Minneapolis  
 †Bell, E. T.....Minneapolis  
 †Belzer, M. S.....Minneapolis  
 Benesh, L. A.....Minneapolis  
 Benesh, N. G.....Minneapolis  
 Benjamin, A. E.....Minneapolis  
 †Benjamin, E. G.....Minneapolis  
 †Benjamin, H. G.....Minneapolis  
 Benn, F. G.....Minneapolis  
 Berger, A. G.....Minneapolis  
 †Bergh, G. S.....Minneapolis  
 †Berkwitz, N. J.....Minneapolis  
 †Berman, Reuben.....Minneapolis  
 †Bessesen, A. N., Jr.....Minneapolis  
 †Bessesen, D. H.....Minneapolis  
 Bessesen, W. A.....Minneapolis  
 Bieter, R. N.....Minneapolis  
 Blackmore, S. C.....Minneapolis  
 Blake, James.....Hopkins  
 †Blake, J. A.....Hopkins  
 Bloedel, T. J.....Osseo  
 Blumenthal, J. S.....Minneapolis  
 †Blumstein, Alex.....Minneapolis  
 Bockman, M. W. H.....Minneapolis  
 Boehrer, J. J.....Minneapolis  
 Boies, L. R.....Minneapolis  
 Booth, A. E.....Minneapolis  
 Boreen, C. A.....Minneapolis  
 Borgeson, E. J.....Minneapolis  
 Borman, C. N.....Minneapolis  
 Borowicz, L. A.....Minneapolis  
 \*Bouman, H. A. H.....Minneapolis  
 Boynton, Ruth E.....Minneapolis  
 Bratrud, A. F.....Minneapolis  
 †Brekke, H. J.....Minneapolis  
 Brooks, C. N.....Minneapolis  
 †Brown, E. D.....Paynesville  
 †Brown, S. P.....Minneapolis  
 Brown, W. D.....Minneapolis  
 †Brutsch, G. C.....Minneapolis  
 †Bryant, F. L.....Minneapolis  
 †Buchstein, H. F.....Minneapolis  
 Bulkley, Kenneth.....Minneapolis  
 Burlingame, D. A.....Minneapolis  
 Buzzelle, L. K.....Minneapolis

Cady, L. H.....Minneapolis  
 Callerstrom, G. W.....Minneapolis  
 Cameron, Isabell L.....Minneapolis  
 Camp, W. E.....Minneapolis  
 Campbell, L. M.....Minneapolis  
 Campbell, O. J.....Minneapolis  
 Cardie, A. E.....Minneapolis  
 Carey, J. B.....Minneapolis  
 Carlson, Lawrence.....Minneapolis  
 Carlson, L. T.....Minneapolis  
 Caron, R. P.....Minneapolis  
 †Caspers, C. G.....Minneapolis  
 †Cavaron, F. T.....Minneapolis  
 †Challman, S. A.....Minneapolis  
 Chesley, A. J.....Minneapolis  
 Christenson, G. R.....Minneapolis  
 Christianson, H. W.....Minneapolis  
 †Clark, H. S.....Minneapolis  
 †Clay, L. B.....Minneapolis  
 †Cochrane, R. F.....Minneapolis  
 †Cohen, B. A.....Minneapolis  
 Cohen, S. S.....Oak Terrace  
 Colberg, A. J.....Minneapolis  
 †Colp, E. A.....Robbinsdale  
 Condit, W. H.....Minneapolis  
 Corbett, J. F.....Minneapolis  
 Cornica, A. D.....Minneapolis  
 Coulter, E. B.....Minneapolis  
 Cowan, D. W.....Minneapolis  
 Cranmer, R. R.....Minneapolis  
 †Cranston, R. W.....Minneapolis  
 Creevy, C. D.....Minneapolis  
 †Creighton, R. H.....Minneapolis  
 Culligan, L. C.....Minneapolis  
 Cumming, H. A.....Minneapolis  
 †Curtin, J. F.....Minneapolis  
 Cutts, George.....Minneapolis

Dady, E. E.....Minneapolis  
 Dahl, E. O.....Minneapolis  
 Dahl, J. A.....Minneapolis  
 Daniel, D. H.....Minneapolis  
 Davis, J. C.....Minneapolis  
 del Plaine, C. W.....Minneapolis  
 Dennis, Clarence.....Minneapolis  
 Devereaux, T. J.....Wayzata  
 Diehl, H. S.....Minneapolis  
 Diessner, H. D.....Minneapolis  
 Dorge, R. I.....Minneapolis  
 Dornblaser, H. B.....Minneapolis  
 Dorsey, G. C.....Minneapolis  
 †Dowidat, R. W.....Minneapolis  
 †Downing, A. H.....Minneapolis  
 Doxey, G. L.....Minneapolis

ROSTER 1945

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Moen, J. K.	Minneapolis	Richdorf, L. F.	Minneapolis	Stein, K. E.	Lakeville
Monahan, Elizabeth S.	Minneapolis	Rieke, W. W.	Wayzata	Stelter, L. A.	Minneapolis
†Monson, E. M.	Minneapolis	Rigler, L. G.	Minneapolis	Stewart, R. I.	Minneapolis
Moren, Edward	Minneapolis	Riordan, Elsie M.	Minneapolis	Stoesser, A. V.	Minneapolis
Morrison, A. W.	Minneapolis	Risch, R. E.	Minneapolis	†Stomel, Joseph	Los Angeles, Calif.
Morrison, Charlotte J.	Minneapolis	†Rizer, D. K.	Minneapolis	†Strachauer, A. C.	Minneapolis
Morse, R. W.	Minneapolis	Rizer, R. I.	Minneapolis	†Stromgren, D. T.	Minneapolis
†Murphy, E. P.	Minneapolis	Roan, C. M.	Minneapolis	Stone, S. P.	Minneapolis
Murphy, I. J.	Minneapolis	Robb, E. F.	Minneapolis	Strout, G. E.	Minneapolis
†Musty, N. J.	Minneapolis	Robbins, O. F.	Minneapolis	Sturre, J. R.	Minneapolis
Myers, J. A.	Minneapolis	†Roberts, L. J.	Minneapolis	Stuurmans, S. H.	Minneapolis
†Naslund, A. W.	Minneapolis	†Roberts, S. W.	Minneapolis	Sullivan, R. M.	Minneapolis
†Neal, J. M.	Minneapolis	Roberts, T. S.	Minneapolis	†Sullivan, R. R.	Minneapolis
Neary, R. P.	Minneapolis	Roberts, W. B.	Minneapolis	Sundt, Mathias	Minneapolis
†Nelson, H. S.	Excelsior	Robotishek, E. C.	Minneapolis	Swanson, R. E.	Minneapolis
Nelson, E. N.	Minneapolis	Rochford, W. E.	Minneapolis	†Sweetser, H. B., Jr.	Minneapolis
Nelson, Harvey	Minneapolis	Rodda, F. C.	Minneapolis	†Sweetser, H. B., Sr.	Minneapolis
†Nelson, L. M.	Minneapolis	†Rosendahl, F. H.	St. Paul	Sweetser, T. H.	Minneapolis
†Nelson, M. C.	Minneapolis	Rosenwald, R. M.	Minneapolis	Sweitzer, S. E.	Minneapolis
†Nelson, O. L. N.	Minneapolis	Roskilly, G. C. P.	Minneapolis	†Swendseen, C. G.	Minneapolis
†Nelson, W. I.	Minneapolis	†Ross, A. J.	Minneapolis	Tangen, G. M.	Minneapolis
†Nesset, L. B.	Minneapolis	Rucker, W. H.	Minneapolis	Taylor, J. H.	Minneapolis
Newhart, Horace	Minneapolis	Rud, N. E.	Minneapolis	Thomas, G. E.	Minneapolis
†Noonan, W. J.	Minneapolis	Rudell, G. L.	Minneapolis	Thomas, G. H.	Minneapolis
Nordin, G. T.	Minneapolis	†Russeth, A. N.	Minneapolis	Thompson, W. H.	Minneapolis
Nordland, Martin	Minneapolis	Rusten, E. M.	Minneapolis	†Thysell, D. M.	Minneapolis
Noth, H. W.	Minneapolis	†Sadler, W. P.	Minneapolis	Tingdale, A. C.	Minneapolis
Nydahl, M. J.	. St. Paul	†St. Cyr, K. J.	Osseo	Todd, Ramona L.	Minneapolis
Nylander, E. G.	Minneapolis	†Saliterman, B. I.	Minneapolis	†Trow, J. E.	Minneapolis
Nystrom, Ruth G.	Minneapolis	Salt, C. G.	Minneapolis	Trueman, H. S.	Minneapolis
Oberg, C. M.	Minneapolis	Samuelson, Samuel	Minneapolis	Tunstead, H. I.	Minneapolis
†O'Brien, W. A.	Minneapolis	†Sandt, K. E.	Minneapolis	Turnachoff, D. D.	Minneapolis
O'Donnell, J. E.	Minneapolis	Sawatzky, W. A.	Minneapolis	Ude, W. H.	Minneapolis
†Olsen, E. G.	Minneapolis	Schaaf, F. H. K.	Minneapolis	Ulrich, H. L.	Minneapolis
Olson, A. C.	Minneapolis	Schaefer, W. G.	Minneapolis	Undine, C. A.	Minneapolis
Olson, O. A.	Minneapolis	†Scheldrup, N. H.	Minneapolis	Vik, A. E.	Minneapolis
†Olson, R. G.	Minneapolis	Scherer, L. R.	Minneapolis	Wahlquist, H. F.	Minneapolis
Oppen, E. G.	Minneapolis	Schiele, B. C.	Minneapolis	Walch, A. E.	Minneapolis
†Öwre, Oscar	Minneapolis	Schmidt, G. F.	Minneapolis	Waldron, C. W.	Minneapolis
†Paine, J. R.	Minneapolis	†Schmitt, A. F.	Minneapolis	Wall, C. R.	Minneapolis
†Palen, B. J.	Minneapolis	†Schmitt, S. C.	Los Angeles, Calif.	†Walsh, W. T.	Minneapolis
Patterson, W. E.	Minneapolis	†Schneider, J. P.	Minneapolis	Wangensteen, O. H.	Minneapolis
*Pederson, R. M.	Minneapolis	†Schneiderman, N. R.	Minneapolis	*Wanous, E. Z.	Minneapolis
Peppard, T. A.	Minneapolis	Schottler, M. E.	Minneapolis	Ward, P. A.	Minneapolis
†Perlman, E. C.	Minneapolis	†Schultz, P. J.	Minneapolis	Watson, C. G.	Minneapolis
Petersen, J. R.	Minneapolis	†Schussler, O. F.	Minneapolis	Watson, C. J.	Minneapolis
†Petersen, R. T.	Minneapolis	Schwartz, V. J.	Minneapolis	Weaver, M. M.	Minneapolis
*Petersen, Thorvald	Minneapolis	†Schwyzer, Gustav	Minneapolis	Wehb, R. C.	Minneapolis
Peterson, Henry	Minneapolis	†Scott, F. H.	Minneapolis	†Weisman, S. A.	Minneapolis
†Peterson, H. W.	Minneapolis	Scott, H. G.	Minneapolis	†West, Catherine C.	Minneapolis
Peterson, N. P.	Minneapolis	†Seashore, Gilbert	Minneapolis	†Westphal, K. F.	Minneapolis
Peterson, O. H.	Minneapolis	Scham, Max	Minneapolis	Wethall, A. G.	Minneapolis
Peterson, P. E.	Minneapolis	Seifert, M. H.	Excelsior	Wetherby, Macnider	Minneapolis
Peterson, W. C.	Minneapolis	†Seljeskog, S. R.	Minneapolis	Weum, T. W.	Minneapolis
Petit, L. J.	Minneapolis	Shandorf, J. F.	Minneapolis	†White, A. A.	Minneapolis
†Pewters, J. T.	Minneapolis	Shaperman, Eva P.	Minneapolis	White, S. M.	Minneapolis
Peyton, W. T.	Minneapolis	Shapiro, M. J.	Minneapolis	White, W. D.	Minneapolis
Pfunder, M. C.	Minneapolis	Sharp, D. V.	Minneapolis	Whitesell, L. A.	Minneapolis
Phelps, K. A.	Minneapolis	Siegmann, W. C.	Minneapolis	†Widen, W. F.	Minneapolis
Platou, E. S.	Minneapolis	Siegel, Clarence	Oak Terrace	Wilcox, A. E.	Minneapolis
Pohl, J. F.	Minneapolis	Silver, J. D.	Minneapolis	†Wilcutt, C. E.	Minneapolis
Pollard, D. W.	Minneapolis	Simons, J. H.	Minneapolis	†Wildehush, F. F.	Minneapolis
Pollock, D. K.	Minneapolis	†Simonsen, D. B.	Minneapolis	Wilder, K. W.	Minneapolis
Polzak, J. A.	Minneapolis	Simpson, E. D.	Minneapolis	†Wilder, R. L.	Minneapolis
Poppe, F. H.	Minneapolis	†Sinsky, M. B.	Minneapolis	Wilken, P. A.	Minneapolis
Potter, R. B.	Minneapolis	Siperstein, D. M.	Minneapolis	†Williams, Robert	Minneapolis
Pothoff, C. J.	Minneapolis	†Sivertsen, Andrew	Minneapolis	Winer, L. H.	Minneapolis
Pratt, F. J.	Minneapolis	Sivertsen, Ivar	Minneapolis	Winther, Nora M. C.	Minneapolis
Preine, J. A.	Minneapolis	Skjol', A. C.	Minneapolis	†Wipperman, F. F.	Minneapolis
Prenton, P. J.	Minneapolis	†Sloan, Julius	Minneapolis	Witham, C. A.	Minneapolis
†Priest, R. E.	Minneapolis	†Smisek, F. M.	Minneapolis	Wittich, F. W.	Minneapolis
Prim, J. A.	Minneapolis	Smith, A. E.	Minneapolis	†Wolf, W. W.	Minneapolis
Proffitt, W. E.	Minneapolis	Smith, Adam M.	Minneapolis	Wohlrabe, A. A.	Minneapolis
Proshek, C. E.	Minneapolis	Smith, Archie M.	Minneapolis	†Wright, C. D.	Minneapolis
†Quello, R. O. B.	Minneapolis	Smith, H. R.	Minneapolis	Wright, S. G.	Minneapolis
†Quinby, T. F.	Minneapolis	Smith, Margaret I.	Minneapolis	Wright, W. S.	Minneapolis
Quist, H. W.	Minneapolis	Smith, N. M.	Minneapolis	Wyatt, O. S.	Minneapolis
Regnier, E. A.	Minneapolis	Soderlind, R. T.	Minneapolis	Wynne, H. M. N.	Minneapolis
Reid, L. M.	Excelsior	Solhaug, S. B.	Minneapolis	Ylvisker, R. S.	Minneapolis
Reif, H. A.	Minneapolis	†Spano, J. P.	Minneapolis	Yoerg, O. W.	Minneapolis
†Rewbridge, A. G.	Minneapolis	†Sperling, Louis	Minneapolis	Zierold, A. A.	Minneapolis
Reynolds, J. S.	Minneapolis	Spink, W. W.	Minneapolis	Zinter, F. A.	Minneapolis
Rice, C. O.	Minneapolis	Spratt, C. N.	Minneapolis	†Ziskin, Thomas	Minneapolis
†Richardson, F. S.	Minneapolis	Stanford, C. F.	Minneapolis		
		†Stebbins, T. L.	Minneapolis		

### KANDIYOH-SWIFT-MEEKER COUNTY MEDICAL SOCIETY

Regular meetings, second Wednesday of month

Annual meeting, January

Number of Members: 37

President	
Anderson, R. E.	Willmar
Secretary	
Jacobs, J. C.	Willmar
Anderson, R. E.	Willmar
Arnson, J. M.	Benson
†Beckjord, P. R.	Willmar
Branton, A. F.	Willmar
Branton, B. J.	Willmar
Brigham, Frank	Watkins
Daignault, Oscar	Benson
Danielson, K. A.	Litchfield
Danielson, Lennox	Litchfield

### SOCETY

Lindsley, S. B.	Willmar
†Macklin, W. E.	Litchfield
★Marsh, O. M.	Litchfield
O'Connor, D. C.	Eden Valley
Penhall, F. W.	Willmar
Porter, O. M.	Willmar
†Proeschel, R. K.	Willmar
Ripple, R. J.	New London
Scofeld, C. L.	Benson
Sellers, G. K.	Dassel
Solsem, F. N.	Ah-Gwah-Ching
Telford, V. J.	Litchfield
†Wilmot, C. A.	Litchfield
Wilmot, H. E.	Litchfield

# ROSTER 1945

## LYON-LINCOLN COUNTY MEDICAL SOCIETY

Regular meetings, first Tuesday of month  
Annual meeting, Last Tuesday in October  
Number of Members: 26

President	
Valentine, W. H.	Tracy
Secretary	
Workman, W. G.	Tracy
Akester, Ward	Nashawauk
†Erickson, A. O.	Ivanhoe
Ford, B. C.	Marshall
†Frank, J. E.	Marshall
Friedell, George	Ivanhoe
Germo, Charles	Balaton

Gray, F. D.	Marshall
†Gray, R. F.	Marshall
†Helferty, J. K.	Tracy
Hermanson, P. E.	Hendricks
Hoidale, A. D.	Tracy
Johnson, P. C.	Tyler
†Karleen, C. I.	Tracy
Krueler, T. C.	Marshall
†Monson, L. J.	Canby
†Murphy, J. E.	Marshall

Purves, G. H.	Hendricks
†Robertson, J. B.	Minneapolis
Sanderson, E. T.	Minneota
†Smith, L. A.	Balaton
†Thompson, C. O.	Hendricks
Vadheim, A. L.	Tyler
Valentine, W. H.	Tracy
†Wolstan, S. D.	Minneota
Workman, W. G.	Tracy
Yaeger, W. W.	Marshall

## MCLEOD COUNTY MEDICAL SOCIETY

Regular meetings, second or third Wednesday of month  
Annual meeting, January  
Number of Members: 19

President	
Sheppard, C. G.	Hutchinson
Secretary	
Sabr, W. G.	Hutchinson
Clement, J. B.	Lester Prairie
†Goss, H. C.	Glencoe
Goss, Martha D.	Glencoe

Holm, H. H.	Glencoe
Jensen, A. M.	Brownston
†Kallestad, L. L.	Hutchinson
Klima, W. W.	Stewart
Lende, Norman	Glencoe
Lippmann, E. W.	Hutchinson
McMahon, M. J.	Green Isle
†Neumaier, Artbur	Glencoe

Rempel, D. D.	Lester Prairie
Sahr, W. G.	Hutchinson
Scholpp, O. W.	Hutchinson
Selmo, J. D.	Norwood
Sheppard, C. G.	Hutchinson
†Sheppard, P. E.	Hutchinson
Truesdale, C. W.	Glencoe
Trutna, T. J.	Silver Lake

## MOWER COUNTY MEDICAL SOCIETY

Regular meetings, last Thursday of each month  
Annual meeting, November  
Number of Members: 26

President	
Flanagan, L. G.	Austin
Secretary	
Robertson, P. A.	Austin
Allen, C. C.	Austin
Allen, H. B.	Austin
†Anderson, D. P., Jr.	Austin
Cronwell, B. J.	Austin
†Eckdale, J. E.	Lyle

†Eckhardt, C. L.	Austin
Fisch, H. M.	Austin
Flanagan, L. G.	Austin
Grise, W. B.	Austin
Havens, J. G. W.	Austin
Hegge, O. H.	Austin
Hegge, R. E.	Austin
Henslin, A. E.	Le Roy
Hertel, G. E.	Austin
†Leck, P. C.	Austin

Lommen, P. A.	Austin
McKenna, J. K.	Austin
Melzer, G. R.	Lyle
Morse, M. P.	Le Roy
Robertson, P. A.	Austin
†Rosenthal, F. H.	Grand Meadow
Schneider, P. J.	Adams
Schottler, G. J.	Dexter
Sheedy, C. L.	Austin
Thomson, J. M.	Chicago, Ill.

## NICOLLET-LE SUEUR COUNTY MEDICAL SOCIETY

Annual meeting, December  
Number of Members: 25

President	
Strathern, C. S.	St. Peter
Secretary	
Olmanson, E. G.	St. Peter
Aitkens, H. B.	Le Center
Covell, W. W.	St. Peter
Curtis, R. A.	LeCenter
Ericson, Swan	Le Sueur
Freeman, G. H.	St. Peter
Giroux, A. A.	North Mankato

†Grimes, B. P.	St. Peter
Henry, M. R.	St. Peter
Hiniker, P. J.	Le Sueur
Holtan, Theodore	Waterville
Johnson, H. C.	North Mankato
Kolars, J. J.	Faribault
Langhoff, A. H.	St. Peter
†Larson, M. H.	Nicollet
†Lenander, M. E.	St. Peter
Nilson, H. J.	North Mankato

†Nissen, A. S.	St. Peter
Olmanson, E. G.	Gaylord
Olson, D. C.	Hastings
†Rossen, R. X.	Le Sueur
†Sonnesyn, N. N.	St. Peter
Strathern, C. S.	St. Peter
Strathern, F. P.	St. Peter
Traxler, J. F.	Henderson
Wohlrabe, C. F.	North Mankato
Wolner, O. H.	St. Peter

## OLMSTED-HOUSTON-FILLMORE-DODGE COUNTY MEDICAL SOCIETY

Regular meetings, first Wednesday every odd month  
Annual meeting, November  
Number of Members: 636

President	
Comfort, M. W.	Rochester
Secretary	
Binger, M. W.	Rochester
Adams, R. C.	Rochester
Adson, A. W.	Rochester
Affeldt, D. E.	Kasson
Ahlfs, Jacob	Caledonia
Aita, J. A.	Rochester
Albers, G. D.	Rochester
Aldrich, C. A.	Rochester
†Allen, E. V.	Rochester
Alvarez, W. C.	Rochester
Amberg, Samuel	Rochester
†Amrusko, J. S.	Rochester
†Anderson, C. D.	Rochester
†Anderson, E. M.	Rochester
Anderson, H. A.	Rochester
Anderson, L. E.	Rochester
Anderson, M. J.	Rochester
Anderson, M. W.	Rochester
†Arny, F. P.	Preston
†Ashburn, F. S.	Rochester
†Atwater, J. S.	Rochester
†Babb, F. S.	Rochester
Bacon, J. F.	Rochester
Bagenstoss, A. H.	Rochester

Bair, H. L.	Rochester
†Baker, G. S.	Rochester
Baker, H. R.	Hayfield
Baker, R. L.	Hayfield
Balfour, D. C.	Rochester
†Balfour, D. C., Jr.	Rochester
†Banner, E. A.	Rochester
Bargen, J. A.	Rochester
Barker, N. W.	Rochester
Barnes, A. R.	Rochester
Barr, M. M.	Rochester
†Beard, Crowell	Rochester
†Beizer, L. H.	Rochester
Beloite, G. B.	Caledonia
Benedict, W. L.	Rochester
†Bennett, J. G.	Rochester
†Bennett, J. K.	Rochester
†Bennett, W. A.	Rochester
Benson, A. J.	Rochester
Benson, R. E.	Rochester
Berkman, D. M.	Rochester
Berkman, J. M.	Rochester
Bianco, J. J.	Rochester
Bickel, W. H.	Rochester
Bigelow, C. E.	Dodge Center
Binger, M. W.	Rochester
Black, A. S., Jr.	Rochester
Black, B. M.	Rochester
Black, F. S.	Rochester
Black, W. A.	Rochester
†Blaisdell, J. S.	Rochester

Blumenthal, L. S.	Rochester
Boothy, W. M.	Rochester
Bowing, H. H.	Rochester
Braasch, W. F.	Rochester
†Bradshaw, S. P.	Rochester
†Breslow, Lester	Rochester
Briggs, Natalie M.	Rochester
†Brindley, G. V., Jr.	Rochester
Broders, A. C.	Rochester
†Brooksbey, W. A.	Rochester
Brown, A. E.	Rochester
Brown, H. A.	Rochester
†Brown, J. R.	Rochester
†Brown, M. H.	Rochester
†Brown, P. W.	Rochester
†Browne, H. C., Jr.	Rochester
Brunsting, L. A.	Rochester
†Bryson, J. C.	Rochester
†Buck, R. M.	Rochester
Buire, L. A.	Rochester
†Burchell, H. B.	Rochester
†Burkhart, R. J.	Rochester
†Butt, H. R.	Rochester
Caldwell, H. W.	Rochester
†Call, J. D.	Rochester
Calmenson, Marvin	Rochester
†Cameron, J. M.	Rochester
†Camp, J. D.	Rochester

# ROSTER 1945

†Campbell, C. M.	Rochester	†Foster, M. A.	Rochester	Iverson, R. M.	Rochester
†Campbell, D. C.	Rochester	Freeman, J. G.	Rochester	†Ivie, J. McK.	Rochester
†Campbell, J. R.	Rochester	Fricke, R. E.	Rochester	Jackson, R. J.	Rochester
†Canfield, W. W.	Houston	†Friedell, M. T.	Rochester	†Jackson, H. S.	Rochester
†Carmona, M. G.	Rochester	Gaarde, F. W.	Rochester	Jarboe, J. P.	Rochester
Carr, D. T.	Rochester	†Gaarde, F. W., Jr.	Rochester	†Johnson, C. R.	Rochester
Carrier, H. M.	Rochester	Gambill, E. E.	Rochester	Johnson, H. P.	Rochester
Ceder, E. T.	Rochester	Gentry, R. W.	Rochester	Johnson, J. R.	Rochester
†Chapman, A. S.	Rochester	Ghormley, R. K.	Rochester	Johnson, R. B.	Lanesboro
†Christensen, N. A.	Rochester	Gibson, R. H.	Rochester	Johnson, R. H.	Rochester
Claramelli, Letizia C.	Rochester	†Giffin, H. M.	Rochester	†Joss, C. S.	Rochester
Clagett, O. T.	Rochester	Giffin, H. Z.	Rochester	†Joyce, G. L.	Rochester
Clarke, L. W.	Spring Valley	Giffin, Mary E.	Rochester	Judd, D. B.	Rochester
†Clarke, E. T.	Rochester	Gilbertson, Eva L.	Rochester	†Judd, E. S.	Rochester
†Clarkson, W. R.	Rochester	†Gillespie, D. R.	Rochester	†Jump, W. C.	Kasson
Clifton, T. A.	Chatfield	Glenn, D. L.	Rochester	Kadish, A. H.	Rochester
†Cleveland, W. H.	Rochester	†Glomset, D. A.	Rochester	†Kaepernick, J. S.	Rochester
†Cluxton, H. E., Jr.	Rochester	Glover, R. P.	Cannon Falls	Kaplan, J. J.	Rochester
Comfort, M. W.	Rochester	†Golden, P. B.	Rochester	†Kauver, A. J.	Rochester
†Condon, W. B.	Rochester	Good, C. A., Jr.	Rochester	Keating, F. R., Jr.	Rochester
Connolly, C. J.	Rochester	Gordon, N. F.	Rochester	Keith, H. M.	Rochester
Cook, E. N.	Rochester	★Gore, H. R.	Rochester	Keith, N. M.	Rochester
†Cooper, Talbert	Rochester	†Gorsuch, M. T.	Rochester	†Kemper, C. M.	Rochester
†Cooper, W. L.	Rochester	†Graham, F. M.	Rochester	Kennedy, R. L. J.	Rochester
†Copsey, H. G.	Rochester	Graham, R. B.	Rochester	†Kennedy, T. J.	Rochester
†Corbit, R. W.	Rochester	†Graham, R. J.	Rochester	Kepler, E. J.	Rochester
Correa, D. H.	Rochester	†Gray, H. K.	Rochester	†Kern, C. E.	Rochester
Costin, M. E., Jr.	Rochester	Green, W. S.	Rochester	Kernohan, J. W.	Rochester
Counseller, V. S.	Rochester	Greene, L. F.	Rochester	†Kierland, R. R.	Rochester
†Coventry, M. B.	Rochester	Greiss, D. F.	Rochester	Kiernan, P. C.	Rochester
Cox, W. B.	Rochester	†Grindlay, J. H.	Rochester	†Kirkland, W. G.	Rochester
Cox, W. F.	Rochester	Guerin, B. B.	Rochester	Kirklin, B. R.	Rochester
†Cragg, R. W.	Rochester	†Guernsey, D. E.	Rochester	Kirklin, O. L.	Rochester
†Craig, W. McK.	Rochester	Habein, H. C.	Rochester	Kleifgen, G. V.	Rochester
Crenshaw, J. L.	Rochester	Hagedorn, A. B.	Rochester	†Klinkenberg, R. B.	Rochester
Crewe, J. E.	Rochester	†Haines, R. D.	Rochester	†Klontz, C. E., Jr.	Rochester
†Cronkite, A. E.	Rochester	Haines, S. F.	Rochester	Kloos, E. K.	Rochester
†Cummings, D. W.	Rushford	†Haisten, A. S.	Rochester	Knutson, J. R. B.	Rochester
†Cunningham, B. P.	Rochester	Hall, B. E.	Rochester	Koelsche, G. A.	Rochester
†Cusick, P. L.	Rochester	Hallberg, O. E.	Rochester	Kratzer, G. L.	Rochester
†Custer, M. D., Jr.	Rochester	Hallenbeck, D. F.	Rochester	†Kreilkamp, B. L.	Rochester
Dafoe, W. A.	Rochester	†Hallendorf, Leonard	Rochester	Krusen, F. H.	Rochester
†Dahleen, H. C.	Rochester	†Hamm, R. S.	Rochester	Kurzweg, F. T.	Rochester
Darling, J. P.	Rochester	†Hammes, E. M., Jr.	Rochester	Kvale, W. F.	Rochester
†Daugherty, G. W.	Rochester	†Hampton, H. P.	Rochester	Lake, C. F.	Rochester
†Davies, L. T.	Rochester	†Hanlon, G. H.	Rochester	Lander, H. H.	Rochester
Davis, A. C.	Rochester	†Hanson, N. O.	Rochester	Lannin, J. C.	Mabel
Davis, I. G.	Rushford	Hargraves, M. M.	Rochester	†Large, H. R.	Rochester
Day, Lois	Rochester	†Harley, R. D.	Rochester	†Larrabee, W. F., Jr.	Rochester
Dearing, W. H.	Rochester	†Harper, S. B.	Rochester	Larson, K. D.	Rochester
†Demong, C. V.	Rochester	Harrington, S. W.	Rochester	Larson, R. A.	Rochester
Desjardins, A. U.	Rochester	Hart, G. M.	Rochester	†Latchem, C. W.	Rochester
Deterling, R. A., Jr.	Rochester	Hartman, H. R.	Rochester	†Leary, W. V.	Rochester
Dixon, C. F.	Rochester	†Harvey, George, Jr.	Rochester	Leddy, E. T.	Rochester
Dobyns, B. M.	Rochester	Hauenz, E. A.	Rochester	†Lehnhoff, H. J., Jr.	Rochester
Dockerty, M. B.	Rochester	Havens, F. Z.	Rochester	†Lemon, W. E.	Rochester
Dolder, F. C.	Eyota	Hawkins, W. J.	Rochester	Lemon, W. S.	Rochester
†Donoghue, F. E.	Rochester	Heck, F. J.	Rochester	†Levin, Louis	Rochester
†Douglass, B. E.	Rochester	Heersema, P. H.	Rochester	Levinson, J. P.	Rochester
†Drake, F. A.	Lanesboro	Heilman, Dorothy M. H.	Rochester	Levy, M. S.	Rochester
†Drapiewski, J. F.	Rochester	Heilman, F. R.	Rochester	Lichtman, A. L.	Rochester
Drips, Delta G.	Rochester	Heim, D. J.	Rochester	†Lien, R. J.	Rochester
†Dry, T. J.	Rochester	†Heinrich, W. A.	Rochester	Lillie, H. I.	Rochester
†DuMais, A. F.	Rochester	Helland, G. M.	Spring Grove	†Lillie, J. C.	Rochester
†Dunlap, D. L.	Rochester	Helland, J. W.	Spring Grove	†Lindahl, W. W.	Rochester
Eaton, L. McK.	Rochester	Helmholz, H. F.	Rochester	Lipscomb, P. R.	Rochester
†Egan, Sherman	Rochester	Hempstead, B. E.	Rochester	†Little, A. G.	Rochester
†Ehni, G. J.	Rochester	†Hench, P. S.	Rochester	Lobitz, W. C., Jr.	Rochester
Elkins, E. C.	Rochester	†Henderson, J. W.	Rochester	†Lochead, D. C.	Rochester
†Ellingson, E. A.	Rochester	†Henderson, L. L.	Rochester	†Lofgren, K. A.	Rochester
Ellison, A. B. C.	Rochester	Henderson, M. S.	Rochester	Logan, A. H.	Rochester
†Emerson, G. F.	Rochester	Herbst, R. F.	Wykoff	Logan, G. B.	Rochester
Emmett, J. L.	Rochester	Herrell, W. E.	Rochester	Long, G. C.	Rochester
†Engstrom, W. W.	Rochester	Hewitt, Edith S.	Rochester	Long, Mary	Rochester
Erich, J. B.	Rochester	Hewitt, R. M.	Rochester	Long, R. C.	Rochester
†Erickson, C. O.	Rochester	†Heyerdale, O. C.	Rochester	Love, J. G.	Rochester
†Erickson, D. J.	Rochester	Higginson, J. F.	Rochester	†Lovelace, W. R.	Rochester
†Evarts, A. B.	Rochester	†Hill, J. R.	Rochester	†Lovelady, S. B.	Rochester
Evert, J. A., Jr.	Rochester	†Hinchey, J. J.	Rochester	†Loevinger, Joseph	Rochester
Eusterman, G. B.	Rochester	Hines, E. A., Jr.	Rochester	†Lovshin, L. L.	Rochester
Faber, J. E.	Rochester	Hinshaw, H. C.	Rochester	†Luckey, C. A.	Rochester
Faher, W. M.	Rochester	†Hoaglund, P. I., Jr.	Rochester	†Lueck, A. G.	Rochester
†Fahlund, G. T. R.	Rochester	Hodgson, C. H.	Rochester	Lundy, J. S.	Rochester
Fair, E. E.	Rochester	Hodgson, Jane E.	Rochester	Lynch, J. L.	Rochester
†Fawcett, R. M.	Rochester	Hodgson, J. R.	Rochester	†Lynch, R. C.	Rochester
Feldman, F. M.	Rochester	Holmes, C. L.	Rochester	†MacCarty, C. S.	Rochester
†Ferguson, F. F.	Rochester	†Hopping, R. A.	Rochester	†MacCarty, W. C.	Rochester
†Ferguson, W. J., Jr.	Rochester	Horan, M. J., Jr.	Rochester	†Macey, H. B.	Rochester
†Ferguson, Wilson J.	Rochester	Horton, B. T.	Rochester	†MacKay, H. J.	Seattle, Wash.
Ferris, D. O.	Rochester	Howell, L. P.	Rochester	†MacLean, A. R.	Rochester
Figi, F. A.	Rochester	Hoyer, L. P., Jr.	Rochester	†Magath, T. B.	Rochester
Fischer, Albert	Rochester	Hoyme, R. M.	Rochester	Manlove, F. R.	Rochester
Flasher, Jack	Rochester	Hughes, T. J.	Rochester	†Mann, F. C.	Rochester
Flashman, F. L.	Rochester	Hunt, A. B.	Rochester	†Manning, J. J.	Rochester
Flickinger, F. M.	Rochester	†Hunter, O. R.	Rochester	†Marr, G. E.	Rochester
Flinn, J. H.	Rochester	†Hurley, J. P.	Rochester	†Margulies, Harold	Rochester
†Foerster, J. M.	Rochester	Hutchinson, S. P.	Rochester	Martens, T. G.	Rochester
† Fogarty, C. W., Jr.	Rochester	Hutchinson, J. C.	Rochester	Martin, D. L.	Rochester
†Forney, R. A.	Rochester	Iams, A. M.	Rochester	†Marvin, C. P.	Rochester
Fortner, Lucille L.	Rochester	†Iverson, H. A.	Rochester	Masson, D. M.	Rochester
Foss, E. L.	Rochester			Masson, J. C.	Rochester
				Maynard, M. S.	Rochester

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†Mayo, C. W.	Rochester	Popp, W. C.	Rochester	Stickney, J. M.	Rochester
†Maytum, C. K.	Rochester	Powers, F. H.	Rochester	Stilwell, G. G.	Rochester
McAnally, A. K.	Rochester	Prangen, A. D.	Rochester	Stotler, J. F.	Rochester
†McCall, C. H.	Rochester	Pratt, J. H., Jr.	Rochester	†Stout, H. A.	Rochester
†McCallig, J. J.	Rochester	†Preston, F. W.	Rochester	†Stover, Lee	Rochester
McCarthy, H. H.	Rochester	Prickman, L. E.	Rochester	†Stroebel, C. F., Jr.	Rochester
†McClellan, G. T.	Rochester	†Priestley, J. T.	Rochester	†Strom, G. W.	Rochester
†McCloud, C. N., Jr.	Rochester	Proudfoot, C. H.	Rochester	†Stuart, R. L.	Rochester
McDonald, J. R.	Rochester	Pruitt, R. D.	Rochester	†Stuhler, L. G.	Rochester
†McEachern, C. G.	Pine Island	Pugh, D. G.	Rochester	†Sutherland, C. G.	Rochester
McKaig, C. B.	Rochester	Pugh, P. F. H.	Rochester	†Svien, H. J.	Rochester
†McKibbin, J. P.	Rochester	Pyle, Marjorie M.	Rochester		
†McNairy, D. J.	Rochester				
McVickers, J. H.	Rochester				
Melton, T. J.	Rochester	†Quattlebaum, Frank.	Rochester	†Taylor, J. C.	Rochester
†Merritt, W. A.	Rochester	†Radcliffe, James, Jr.	Rochester	Thomas, H. R.	Rochester
†Messler, J. D.	Rochester	Randall, L. M.	Rochester	†Thomson, J. F.	Rochester
Metcalfe, R. M.	Rochester	†Rasmussen, W. C.	Rochester	Thornell, W. C.	Rochester
†Meyers, W. C.	Rochester	†Raszkowski, H. J.	Rochester	†Tice, A. W.	Rochester
Meyerding, H. W.	Rochester	Regan, J. M.	Rochester	†Tice, G. I.	Rochester
†Millen, F. J.	Rochester	†Richardson, R. J.	Rushford	†Tillisch, J. H.	Rochester
†Miller, J. R., Jr.	Rochester	†Rinehart, R. E.	Rochester	Tinney, W. S., Jr.	Rochester
†Miller, R. C.	Rochester	Risser, A. F.	Stewartville	Tompkins, S. F.	Rochester
†Miller, Sidney	Rochester	Rivers, A. B.	Rochester	†Toseland, N. E.	Rochester
Moe, A. E.	Rochester	Rives, H. F.	Rochester	Treusch, J. V.	Rochester
Moersch, F. P.	Rochester	Robertson, H. E.	Rochester	†Trimingham, H. G. L.	Rochester
Moersch, H. J.	Rochester	†Robinson, F. J.	Rochester	†Tuohy, E. B.	Rochester
Montgomery, Hamilton	Rochester	Robson, J. T.	Rochester	Turner, T. R.	Rochester
Morlock, C. G.	Rochester	†Rogers, J. D.	Rochester	†Tweedy, J. A.	Rochester
†Mousel, L. H.	Rochester	†Rogne, W. G.	Spring Grove	Uhrich, E. C.	Rochester
Multhauf, C. J.	Rochester	Rosenow, E. C.	Rochester	†Uihlein, Alfred.	Rochester
Murphy, J. T.	Rochester	†Rosenow, J. H.	Rochester	†Underdahl, L. O.	Rochester
†Murphy, M. E.	Rochester	Rousuck, A. A.	Rochester	†Urban, D. A.	Rochester
†Murray, R. A.	Rochester	Rowland, W. D.	Rochester	†Van Demark, R. E.	Rochester
†Musgrove, J. E.	Rochester	Rucker, C. W.	Rochester	Varney, J. H.	Rochester
Mussey, Mary E.	Rochester	†Rulifson, E. T., Jr.	Rochester	†Vaughn, L. D.	Rochester
Mussey, R. D.	Rochester	†Rushton, J. G.	Rochester	Vigran, Myron	Rochester
†Mussey, Robert D.	Rochester	Russ, F. H.	Rochester		
Myers, T. T.	Rochester	Ryan, B. F.	Rochester		
		Rynearson, E. H.	Rochester		
†Nay, R. M.	Rochester				
†Neale, R. M.	Rochester				
Neibling, H. A.	Rochester				
†Nester, H. D.	Rochester				
New, G. B.	Rochester				
Nichols, D. R.	Rochester				
†Nickel, W. R.	Rochester				
Nielson, W. L.	Rochester				
Norris, N. T.	Caledonia				
Notier, V. A.	Rochester				
†Odel, H. M.	Rochester				
O'Leary, P. A.	Rochester				
Olsen, A. M.	Rochester				
Olson, E. A.	Pine Island				
†Olson, G. E.	West Concord				
†Olson, J. D.	Rochester				
†Olson, S. W.	Rochester				
Ongard, L. K.	Houston				
†Owens, A. H., Jr.	Rochester				
†Padgett, H. O.	Rochester				
Parker, R. L.	Rochester				
Parkhill, Edith M.	Rochester				
†Pattison, D. H.	Rochester				
†Paulson, D. L.	Rochester				
†Paulson, J. A.	Rochester				
Payne, J. H.	Rochester				
†Pearson, D. J.	Rochester				
Pease, Gertrude L.	Rochester				
Pemberton, J. deJ.	Rochester				
†Pender, J. W.	Rochester				
Pennington, R. E.	Rochester				
†Perkins, R. F.	Rochester				
Perry, T. T.	Rochester				
†Peters, G. A.	Rochester				
Petersen, M. C.	Rochester				
†Peterson, W. G.	Rochester				
†Phalen, G. S.	Rochester				
Piper, M. C.	Rochester				
†Plimpton, N. C., Jr.	Rochester				
Plummer, W. A.	Rochester				
Polley, H. F.	Rochester				
Pollock, L. W.	Rochester				
†Polmeteet, F. E.	Rochester				
Pool, T. L.	Rochester				
Popovich, S. J.	Rochester				

## PARK REGION DISTRICT AND COUNTY MEDICAL SOCIETY

Douglas, Grant, Otter Tail and Wilkin Counties  
Regular meetings, March, June, September, December

Annual meeting, December

Number of Members: 61

President	
Blakey, A. R.	Osakis
Secretary	
Thompson, H. B.	Fergus Falls
Arndt, H. W.	Detroit Lakes
Baker, A. C.	Fergus Falls
Baker, Jeannette L.	Fergus Falls

Baker, N. H.	Fergus Falls
Bergquist, K. E.	Battle Lake
Blakey, A. R.	Osakis
Boline, C. A.	Battle Lake
Boyd, L. M.	Alexandria
†Boysen, J. E.	Pelican Rapids
Boysen, Peter	Pelican Rapids
Broker, W. S.	Wadena
Burnap, W. L.	Fergus Falls

Clifford, G. W.	Alexandria
Combacker, L. C.	Fergus Falls
Drought, W. W.	Fergus Falls
Esser, John	Perham
Estrem, C. O.	Fergus Falls
†Estrem, R. D.	Fergus Falls
Freeman, W. N.	Perham
Griswold, F. E.	Hoffman
Hanson, E. C.	New York Mills

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Haskell, A. D.	Alexandria	McMahon, L. H.	Breckenridge
Heiberg, E. A.	Fergus Falls	Miller, W. A.	New York Mills
Howg, E. M.	Barrett	Mouritsen, G. J.	Fergus Falls
Jacobs, G. C.	Fergus Falls	Naegeli, Frank	Fergus Falls
Jacobson, C. W.	Breckenridge	Nelson, R. A.	Fergus Falls
Johnson, O. V.	Fergus Falls	Nelson, W. O. B.	Fergus Falls
Kierland, P. E.	Alexandria	Parson, L. R.	Elbow Lake
Leibold, H. H.	Parkers Prairie	Parson, Lillian B.	Elbow Lake
Leighton, Robert	Evansville	Patterson, W. L.	Fergus Falls
Lewis, A. J.	Henning	Paulson, T. S.	Fergus Falls
Love, F. A.	Carlos	Paulson, E. C.	Elbow Lake
Lund, C. J. T.	Fergus Falls	Randall, A. M.	Ashby
McElligott, E. W.	Breckenridge	Reeve, E. T.	Elbow Lake
		Rimer, E. W.	Breckenridge

RAMSEY COUNTY MEDICAL SOCIETY

Regular meetings, last Monday in every month excepting June, July, August

Annual meeting, last Monday in January

Number of Members: 370

Ohioage, Justus	President	St. Paul
	Secretary	St. Paul
Williams, C. K.		St. Paul
Abbott, J. S.		St. Paul
†Adair, A. F., Jr.		St. Paul
Ahrens, A. E.		St. Paul
Ahrens, A. H.		St. Paul
Alberts, M. W.		St. Paul
Alden, J. F.		St. Paul
†Aldes, J. H.		St. Paul
Alexander, F. H.		St. Paul
†Armstrong, J. M.		St. Paul
Arnquist, A. S.		St. Paul
†Arzt, P. K.		St. Paul
Aurelius, J. R.		St. Paul
Audsman, C. F.		St. Paul
Bacon, D. K.		St. Paul
†Bacon, L. C.		St. Paul
†Balcome, M. M.		St. Paul
†Barnes, R. G., Jr.	Hastings	
Barry, L. W.		St. Paul
Barsness, Nellie O. N.		St. Paul
Beals, Hugh		St. Paul
Beech, R. H.		St. Paul
†Beek, H. O.		St. Paul
Beer, J. J.		St. Paul
Bell, C. C.		St. Paul
Benepe, J. L.		St. Paul
Bennion, P. H.		St. Paul
Bentley, N. P.		St. Paul
†Bernstein, W. C.		St. Paul
Bicek, J. F.		St. Paul
Binger, H. E.		St. Paul
Birnberg, T. L.		St. Paul
Bock, R. A.		St. Paul
Boeckmann, Egil		St. Paul
Bolender, H. L.		St. Paul
†Borg, J. F.		St. Paul
Bouma, L. R.		St. Paul
Brand, G. D.		St. Paul
Bray, E. R.		St. Paul
Briggs, J. F.		St. Paul
Broadie, T. E.		St. Paul
Brodie, W. D.		St. Paul
*Brown, E. I.		St. Paul
Brown, J. C.		St. Paul
†Bulinski, T. J.		St. Paul
†Burch, E. P.		St. Paul
Burch, F. E.		St. Paul
Burns, R. M.		St. Paul
Burton, C. G.		St. Paul
Busher, II. H.		St. Paul
†Cain, C. L.		St. Paul
Carley, W. A.		St. Paul
Carroll, W. C.		St. Paul
Chadbourne, C. R.		St. Paul
Chatterton, C. C.		St. Paul
Christiansen, A.		St. Paul
†Christison, J. T.		St. Paul
†Clark, H. B., Jr.		St. Paul
Cochrane, B. B.		St. Paul
†Coddon, W. D.		St. Paul
Colby, W. L.		St. Paul
Cole, W. H.		St. Paul
†Collie, H. G.		St. Paul
Colvin, A. R.		St. Paul
*Conlin, L. J.	North	St. Paul
Connor, C. E.		St. Paul
Cook, C. K.		St. Paul
†Cooper, C. C.		St. Paul
Countryman, R. S.		St. Paul
†Cowern, E. W.	No.	St. Paul
Critchfield, L. R.		St. Paul
Crombie, F. J.	No.	St. Paul
Crump, J. W.		St. Paul
Culligan, J. M.		St. Paul
Dack, L. G.		St. Paul
†Daugherty, E. B., Marine-on-St. Croix		St. Paul
Daugherty, L. E.		St. Paul
Davis, E. V.		St. Paul
†Davis, Herbert		St. Paul
†Davis, William		St. Paul
DeCoursey, D. M.		St. Paul
Dedolph, Karl		St. Paul
Deraut, B. I.		St. Paul
Dickson, T. H.		St. Paul
Dittman, G. C.		St. Paul
Donohue, P. F.		St. Paul
Dovre, C. M.		St. Paul
Drake, C. B.		St. Paul
Dunn, J. N.		St. Paul
Earl, George		St. Paul
†Earl, John		St. Paul
Earl, Robert		St. Paul
Edlund, G.		St. Paul
†Edwards, J. W.		St. Paul
Edwards, T. J.		St. Paul
†Eginton, C. T.		St. Paul
Ely, O. S.	South	St. Paul
Emerson, E. C.		St. Paul
Endress, E. K.		St. Paul
Enroth, O. E.		St. Paul
Ernest, G. C. H.	South	St. Paul
†Eshelby, E. C.		St. Paul
†Fahey, E. W.		St. Paul
Ferguson, J. C.		St. Paul
Fesler, H. H.		St. Paul
Flanagan, H. F.		St. Paul
Fogarty, C. W.		St. Paul
†Fogelberg, E. J.		St. Paul
Foley, F. E. B.		St. Paul
Freeman, C. D.		St. Paul
Freidman, L. L.		St. Paul
Fritz, W. L.		St. Paul
Froats, C. W.		St. Paul
*Gager, E. C.		St. Paul
Garbrecht, Arthur		St. Paul
Gardiner, D. G.		St. Paul
Gardner, W. P.		St. Paul
Geer, E. K.		St. Paul
Gehlen, J. N.		St. Paul
Geist, G. A.		St. Paul
Ghent, C. H.		St. Paul
Gibbs, E. C.		St. Paul
†Giffilan, J. S.		St. Paul
Gilkey, S. E.		St. Paul
Ginsberg, Wm.		St. Paul
Goltz, E. V.		St. Paul
Grant, H. W.		St. Paul
Gratzek, Thomas		St. Paul
†Grau, R. K.		St. Paul
Gruenhagen, A. P.		St. Paul
†Haavik, J. E.		St. Paul
Hall, A. R.		St. Paul
Hall, H. H.		St. Paul
Hanius, E. M.		St. Paul
Hannond, J. F.		St. Paul
Hanson, H. B.		St. Paul
Harmon, G. E.		St. Paul
Hartfiel, W. F.		St. Paul
Hartig, Marjorie		St. Paul
Hartle, E. C.		St. Paul
Hassett, M. F.		St. Paul
Hauser, V. P.		St. Paul
†Heck, W. W.		St. Paul
Hedenstrom, F. G.		St. Paul
Hengstler, W. H.		St. Paul
Hensel, C. N.		St. Paul
†Herman, Samuel		St. Paul
Heron, R. C.		St. Paul
Herrmann, E. T.		St. Paul
†Hertz, M. J.		St. Paul
Hilger, A. W.		St. Paul
Hilger, D. D.		St. Paul
†Hilger, J. A.		St. Paul
Hilger, L. A.		St. Paul
Hilger, L. D.		St. Paul
Hilker, L. P.		St. Paul
Hochfilzer, J. J.		St. Paul
Hoff, Alfred		St. Paul
†Hoffman, M. H.		St. Paul
Holcomb, O. W.		St. Paul
Holmen, R. W.		St. Paul
Holt, J. E.		St. Paul
†Hopkins, G. W.		St. Paul
Howard, M. A.		St. Paul
Howard, W. S.		St. Paul
Hullisiek, H. E.		St. Paul
†Hullsieck, R. B.		St. Paul
Hurwitz, M. M.		St. Paul
Ide, A. W.		St. Paul
Ikeda, Kano		St. Paul
Ingerson, C. A.		St. Paul
†Janssen, M. E.		St. Paul
Jesion, J. W.		St. Paul
†Johnson, W. G.		St. Paul
Johnson, A. M.		St. Paul
Johnson, C. E.		St. Paul
Johnson, J. A.		St. Paul
Jones, E. M.		St. Paul
Kauffman, G. R.		St. Paul
†Kaplan, D. H.		St. Paul
†Karon, I. F.		St. Paul
†Kasper, E. M.		St. Paul
†Katzovitz, Hyman		St. Paul
Keefe, Rolland		St. Paul
Kelly, J. V.		St. Paul
Kelly, P. H.		St. Paul
Kelsey, C. M.		St. Paul
†Kenefick, E. V.		St. Paul
Kennedy, W. A.		St. Paul
Kenyon, T. J.		St. Paul
Kesting, Herman		St. Paul
Klein, H. N.		St. Paul
Knauff, M. K.		St. Paul
†Knutson, G. E.		St. Paul
†Koepsell, A. A. H.		St. Paul
Kugler, A. A.		St. Paul
Kuske, A. W.		St. Paul
Kvitrud, Gilbert		St. Paul
†Langenderfer, F. V.		St. Paul
Larsen, C. L.		St. Paul
Larson, Eva-Jane		St. Paul
†Lauer, D. J.		St. Paul
Lax, M. H.		St. Paul
Leahy, Bartholomew		St. Paul
Leavenworth, R. O.		St. Paul
†Leick, R. M.		St. Paul
Leitch, Archibald		St. Paul
Lepak, J. A.		St. Paul
†Lerche, William		Cable, Wis.
Leven, N. L.		St. Paul
†Leverenz, C. W.		St. Paul
Levin, Bert		St. Paul
Levitt, G. X.		St. Paul
Lick, C. L.		St. Paul
Lightbourn, E. L.		St. Paul
Lilleberg, N. J.		St. Paul
Lippman, H. S.		St. Paul
†Little, W. J.		St. Paul
Loken, S. M.		St. Paul
Lowe, E. R.	South	St. Paul
Lowe, T. A.	South	St. Paul
Lundholm, A. M.		St. Paul
Lynch, F. W.		St. Paul
Madden, J. F.		St. Paul
Malrich, J. A.		St. Paul
†Marks, R. W.		St. Paul
Martineau, J. L.		St. Paul
†Mattson, C. H.		St. Paul
McCain, D. L.		St. Paul
McCarthy, J. J.		St. Paul
McCarthy, W. R.		St. Paul
McClanahan, J. H.		White Bear
McClanahan, T. S.		White Bear
McEwan, Alexander		St. Paul

# ROSTER 1945

+McLaren, Jennette M.	Minneapolis	St. Paul
Meade, J. R.	St. Paul	St. Paul
†Mears, B. J.	St. Paul	St. Paul
†Medelman, J. P.	St. Paul	St. Paul
Meyerding, E. A.	St. Paul	St. Paul
Moga, J. A.	St. Paul	St. Paul
Molander, H. A.	St. Paul	St. Paul
Moquin, Marie A.	St. Paul	St. Paul
†Moren, L. A.	St. Paul	St. Paul
Moriarty, Berenice	St. Paul	St. Paul
Moriarty, Cecile R.	St. Paul	St. Paul
Muller, R. T.	St. Paul	St. Paul
†Naegeli, A. E.	St. Paul	St. Paul
Nash, L. A.	St. Paul	St. Paul
Nelson, L. A.	St. Paul	St. Paul
†Newell, F. W.	St. Paul	St. Paul
Nichols, A. E.	St. Paul	St. Paul
Noble, J. F.	St. Paul	St. Paul
†Noble, J. L.	St. Paul	St. Paul
†Nuebel, C. J.	St. Paul	St. Paul
Nye, Katherine A.	St. Paul	St. Paul
Nye, Lillian L.	St. Paul	St. Paul
+O'Brien, W. M.	St. Paul	St. Paul
+O'Connor, L. J.	St. Paul	St. Paul
Oerting, Harry	St. Paul	St. Paul
†Ogden, Warner	St. Paul	St. Paul
Ohage, Justus, Jr.	St. Paul	St. Paul
†Olsen, R. L.	St. Paul	St. Paul
Olson, C. A.	St. Paul	St. Paul
+O'Reilley, B. E.	St. Paul	St. Paul
Ostergren, E. W.	St. Paul	St. Paul
Ouellette, A. J.	St. Paul	St. Paul
Pearson, F. R.	St. Paul	St. Paul
Pearson, M. M.	St. Paul	St. Paul
Pederson, A. H.	St. Paul	St. Paul
Perry, C. G.	St. Paul	St. Paul
†Peterson, D. B.	St. Paul	St. Paul
Peterson, H. O.	St. Paul	St. Paul
†Peterson, J. L. E.	St. Paul	St. Paul
Peterson, V. N.	St. Paul	St. Paul
Plondke, F. J.	St. Paul	St. Paul
Prendergast, H. J.	St. Paul	St. Paul
Radabaugh, R. C.	Hastings	
†Ramsey, R. M.	St. Paul	St. Paul
†Ramsey, W. R.	St. Paul	St. Paul
Rasmussen, R. C.	St. Paul	St. Paul
†Rea, C. E.	St. Paul	St. Paul
†Reif, H. J.	St. Paul	St. Paul
Richards, E. T. F.	St. Paul	St. Paul
Richardson, H. E.	St. Paul	St. Paul
†Rick, P. F. W.	St. Paul	St. Paul
†Ritchie, W. P.	St. Paul	St. Paul
Ritt, A. E.	St. Paul	St. Paul
Rogers, S. F.	St. Paul	St. Paul
Rosenbladt, Louis	St. Paul	St. Paul
†Rosenholtz, Burton	St. Paul	St. Paul
Rosenthal, Robert	St. Paul	St. Paul
Roth, G. C.	St. Paul	St. Paul
Rothschild, H. J.	St. Paul	St. Paul
Roy, P. C.	St. Paul	St. Paul
Ruhberg, G. N.	St. Paul	St. Paul
Rutherford, W. C.	St. Paul	St. Paul
Ryan, J. J.	St. Paul	St. Paul
†Ryan, J. M.	St. Paul	St. Paul
Ryan, M. E.	St. Paul	St. Paul
†Sarnecki, M. M.	St. Paul	St. Paul
Satterlund, V. L.	St. Paul	St. Paul
Savage, F. J.	St. Paul	St. Paul
Schmidtke, R. L.	St. Paul	St. Paul
Schoch, R. B. J.	St. Paul	St. Paul
Schons, Edward	St. Paul	St. Paul
†Schroeckenstein, H. F.	St. Paul	St. Paul
Schuldt, F. C.	St. Paul	St. Paul
Schulze, A. G.	St. Paul	St. Paul
†Schwyzer, H. C.	St. Paul	St. Paul
Scott, E. E.	St. Paul	St. Paul
Selvig, H. S.	St. Paul	St. Paul
†Senkler, G. E.	St. Paul	St. Paul
Setzer, H. J.	St. Paul	St. Paul
Shannon, W. R.	St. Paul	St. Paul
†Shellman, J. L.	St. Paul	St. Paul
†Shimonek, S. W.	St. Paul	St. Paul
†Short, Jacob	St. Paul	St. Paul
†Simons, L. T.	St. Paul	St. Paul
Singer, B. J.	St. Paul	St. Paul
Skinner, H. O.	St. Paul	St. Paul
Smisek, E. A.	St. Paul	St. Paul
Smith, V. D. E.	St. Paul	St. Paul
Snyder, G. W.	St. Paul	St. Paul
Sohlberg, O. I.	St. Paul	St. Paul
Sommers, Ben	St. Paul	St. Paul
†Sorem, M. B.	St. Paul	St. Paul
Souster, B. B.	St. Paul	St. Paul
Sorafka, J. M.	St. Paul	St. Paul
†Steinberg, C. L.	St. Paul	St. Paul
Sterner, E. G.	St. Paul	St. Paul
Sterner, E. R.	St. Paul	St. Paul
Sterner, O. W.	St. Paul	St. Paul
Stewart, Alexander	St. Paul	St. Paul

## RED RIVER VALLEY MEDICAL SOCIETY

Kittson, Mahnomen, Marshall, Norman, Pennington, Polk, Red Lake and Roseau Counties.

Regular meetings, quarterly

Annual meeting, December

Number of Members: 59

### President

Cameron, J. H. .... Erskine

### Secretary

Oppegaard, C. L. .... Crookston

Adkins, C. M.	Thief River Falls
†Anderson, W. E.	Thief River Falls
Anderson, W. S.	Northfield
Bechtel, M. J.	Warren
Behr, O. K.	Crookston
Berge, D. O.	Roseau
Berlin, A. S.	Hallock
Bertelson, O. L.	Crookston
Biedermann, Jacob	Thief River Falls
†Boardman, D. V.	Twin Valley
Bratrud, Edward	Thief River Falls
Brink, A. A.	Baudette
Brown, L. L.	Crookston
Cameron, J. H.	Erskine
Carlson, A. E.	Warren
Covey, K. W.	Mahnomen

†Delmore, J. L., Jr. .... Roseau

Delmore, J. L., Sr. .... Roseau

†Derifield, R. S. .... Crookston

Ederer, J. J. .... Mahnomen

Erickson, Eskil .... Halstad

\*Griffin, P. J. .... Fertile

†Hackie, E. A. .... Hallock

Hedemark, H. H. .... Thief River Falls

Helseth, H. K. .... Thief River Falls

Henney, W. H. .... McIntosh

Hollands, W. H. .... Fisher

Holmstrom, C. H. .... Warren

Janecky, A. G. .... Monroe, La.

†Johnson, H. C. .... Thief River Falls

Johnson, R. E. .... Crookston

Kirk, G. P. .... East Grand Forks

†Knutson, G. A. .... Greenbush

Kostick, W. R. .... Fertile

Leitch, N. M. .... Warroad

Loken, Theodore .... Ada

Lynde, O. G. .... Thief River Falls

Mellby, O. F. .... Thief River Falls

Mercil, W. F. .... Crookston

Morley, G. A. .... Crookston

Nelson, H. E. .... Crookston

Norman, J. F. .... Crookston

Oppgaard, C. L. .... Crookston

Oppgaard, M. O. .... Crookston

Parsons, J. G. .... Crookston

Pearson, L. O. .... Warroad

Petkevich, F. M. .... Red Lake Falls

Reff, A. R. .... Crookston

†Rice, H. R. .... Roseau

Sather, Allen .... Fosston

†Sather, G. A. .... Fosston

†Sather, R. N. .... McIntosh

†Sather, R. O. .... Crookston

Shaleen, A. W. .... Hallock

Shedlov, Abraham .... Fosston

Starekow, M. D. .... Thief River Falls

Stevens, John .... Gonvick

Stocking, F. F. .... Hallock

†Teisberg, J. E. .... Middle River

Torgerson, W. B. .... Oklee

Uhley, C. G. .... Crookston

## REDWOOD-BROWN COUNTY MEDICAL SOCIETY

Regular meetings, quarterly

Annual meeting, May

Number of Members: 35

Ferguson, W. C.	Walnut Grove
Fesenmaier, O. B.	New Ulm
Fritzsche, Albert	New Ulm
†Fritzsche, C. J.	New Ulm
Fritzsche, T. R.	New Ulm
Gibbons, F. C.	Comfrey
Goblirsch, A. P.	Sleepy Eye
Hammermeister, T. F.	New Ulm
Hovde, Rolf	Wintrop
Just, H. J.	Hastings
Keithahn, E. E.	Sleepy Eye
Kusske, A. L.	New Ulm
Mortensbak, H. E.	New Ulm

Nuessle, W. G. .... Springfield

Penk, E. R. .... Springfield

Peterson, R. A. .... Vesta

†Reineke, G. F. .... New Ulm

Saffert, C. A. .... New Ulm

Schroepel, J. E. .... Wintrop

Seifert, O. J. .... New Ulm

Senecall, C. R. .... Enumclaw, Wash.

†Shima, G. J. .... Sleepy Eye

†Vogel, H. A. L. .... Sleepy Eye

Vogel, J. H. .... New Ulm

†Wahlberg, E. W. .... Sleepy Eye

†Weiser, G. B. .... New Ulm

Wohlrabe, E. J. .... Springfield

# ROSTER 1945

## RENNILLE COUNTY MEDICAL SOCIETY

Regular meetings, second Tuesday of each month  
Annual meeting, November  
Number of Members: 22

President	
Billings, R. E.	Franklin
Secretary	Hector
Erickson, R. E.	
Adams, R. C.	Bird Island
Billings, R. E.	Franklin
Brand, W. A.	Redwood Falls
Bushard, W. J.	Minneapolis

†Cepelcha, S. F.	Redwood Falls
Cole, J. G.	Redwood Falls
Cosgriff, J. A.	Olivia
Dordal, J.	Sacred Heart
Erickson, R. E.	Hector
Fawcett, A. M.	Renville
Flinn, T. E.	Redwood Falls
Gaines, E. C.	Buffalo Lake
†Hartmann, C. M.	Fairfax

Johnson, H. E.	Bird Island
Johnson, O. H.	Redwood Falls
Johnson, W. E.	Morgan
Lenz, J. R.	Morton
†Madland, R. S.	Fairfax
†Mesker, G. H.	Olivia
Passer, A. A.	Olivia
Preisinger, J. W.	Renville
†Rinkey, Eugene	Redwood Falls

## RICE COUNTY MEDICAL SOCIETY

Regular meetings, at call  
Annual meeting, June  
Number of Members: 26

President	
Moses, Joseph, Jr.	Northfield
Secretary	
Mears, R. F.	Northfield
Dungay, N. S.	Northfield
Engberg, E. J.	Faribault
Francis, D. W.	Morrinstown
Hanson, A. M.	Faribault
Hanson, J. W.	Northfield

Huxley, F. R.	Faribault
Lexa, F. J.	Lonsdale
Lufkin, C. D.	Northfield
Lyght, C. E.	New York, N. Y.
McKeon, J. O.	Montgomery
Mears, R. F.	Northfield
Meyer, F. C.	Kenyon
Meyer, P. F.	Faribault
Moses, Joseph, Jr.	Northfield
Moses, R. R.	Kenyon
†Nielsen, A. M.	Northfield

Nuetzman, A. W.	Faribault
Robilliard, C. M.	Faribault
Rohrer, C. A.	Waterville
†Rumpf, C. W.	Faribault
Stevenson, F. W.	Faribault
Studer, D. J.	Faribault
Traeger, C. A.	Faribault
*Warren, F. S.	Washington, D. C.
Weaver, P. H.	Faribault
Wilson, Warren	Northfield

## ST. LOUIS COUNTY MEDICAL SOCIETY

Carlton, Cook, Itasca, Lake and St. Louis Counties

Regular meetings, second Thursday every month except July and August  
Annual meeting, December  
Number of Members: 248

President	
Ryan, W. J.	Duluth
Secretary	

Buckley, R. P.	Duluth
Abraham, A. L.	Duluth
Adams, B. S.	Hibbing
†Addy, E. R.	Gilbert
†Ahl, C. W.	Hibbing
Akins, W. M.	Eveleth
Albrecht, H. H.	Floodwood
Anderson, H. R.	Deer River
†Anderson, C. L.	Duluth
†Arko, J. L.	Hibbing
Armstrong, E. L.	Duluth
Athens, A. G.	Duluth
†Ayres, G. T.	Ely
Bachnik, F. W.	Hibbing
Backus, R. W.	Nopeming
Baich, V. M.	Bovey
†Bagley, C. M.	Duluth
Bagley, Elizabeth C.	Duluth
Bagley, W. R.	Duluth
†Bakkila, Henry	Duluth
Bardon, Richard	Duluth
Barney, L. A.	Duluth
†Barrett, E. E.	Duluth
†Batty, J. L.	Hibbing
†Becker, F. T.	Duluth
Bender, J. H.	Big Fork
Bepko, Marie K.	Cloquet
Berdez, G. L.	Duluth
Bianco, A. J.	Duluth
Binet, H. E.	Grand Rapids
Blakely, C. C.	Barnum
†Blumgren, J. E.	Duluth
Boman, P. G.	Duluth
Bowen, R. L.	Hibbing
†Boyer, S. H., Jr.	Duluth
Boyer, S. H., Sr.	Duluth
Braun, O. C.	Nashwauk
†Braverman, N. J.	Duluth
†Bray, P. N.	Duluth
Bray, R. B.	Biwabik
Buckley, R. P.	Duluth
Butler, J. K.	Carlton

Cantwell, W. F.	International Falls
Carstens, C. F.	Hibbing
Chapman, T. L.	Duluth
Chermak, F. G.	International Falls
*Christensen, E. P.	Two Harbors
†Christenson, C. H.	Duluth
†Clapp, Stewart	Duluth
Clark, F. F.	Duluth
†Cleaves, W. D.	Grand Rapids
†Clegg, R. S.	Duluth
Collins, A. N.	Duluth

†Collins, H. C.	Duluth
Coventry, W. A.	Duluth
†Coventry, W. D.	Virginia
†Cunningham, C. B.	Virginia
Dahlin, I. T.	Aurora
Davies, R. J.	Nopeming
Dickson, F. H., Jr.	Proctor
Dittrich, R. J.	Duluth
Doolittle, L. E.	Duluth
†Doyle, G. C.	Duluth
Eckman, P. F.	Duluth
Eckman, R. J.	Duluth
Ekbald, J. W.	Duluth
Elias, F. J.	Duluth
Emmanuel, K. W.	Duluth
Eppard, R. M.	Cloquet
Erskine, G. M.	Grand Rapids
Estrem, T. A.	Hibbing
EWens, H. B.	Virginia
Fankboner, A. V.	Duluth
Fawcett, K. R.	Duluth
†Fellows, M. F.	Duluth
†Feuling, J. C.	Bovey
Fischer, M. McC.	Duluth
†Fisketti, Henry	Duluth
*Forbes, R. S.	Duluth
Fredericks, M. G.	Duluth
Gendron, J. F.	Grand Rapids
Gillespie, M. G.	Duluth
Goldfish, D. R.	Duluth
Goodman, C. E.	Virginia
†Gowan, L. R.	Duluth
†Grabow, J. J.	Duluth
Graham, A. W.	Chisholm
Grahek, J. P.	Ely
†Graves, W. N.	Duluth
Guldseth, G. J.	Duluth
Hammar, L. M.	Two Harbors
Haney, C. L.	Duluth
Hanson, E. O.	Cloquet
†Harlowe, H. D.	Virginia
†Harr, E. J.	Carlton
Harris, C. N.	Hibbing
Hatch, W. E.	Duluth
†Hathaway, S. J.	Proctor
Hayes, M. F.	Nashwauk
Hedberg, G. A.	Nopeming
Heiam, W. C.	Cook
Hilding, A. C.	Duluth
Hill, F. E.	Duluth
Hirschboeck, F. J.	Duluth
Hoff, H. O.	Duluth
†Honke, R. W.	Proctor
Houkom, S. S.	Duluth
Hutchinson, Henry	Hastings

Jacobson, Clarence	Chisholm
Jensen, T. J.	Duluth
†Jessico, C. M.	Duluth
†Johnson, K. E.	Duluth
Johnsrud, L. W.	Chisholm
Jolin, F. M.	Bovey
†Jolin, R. V.	Grand Rapids
Kelly, A. C.	Duluth
Kemp, M. W.	Moose Lake
Kiesling, I. H.	Coleraine
Kingsbury, E. M.	Moose Lake
Klein, Harry	Duluth
Knapp, F. N.	Duluth
Kohlby, C. O.	Duluth
Kotchevar, F. R.	Eveleth
†Kozberg, Oscar	Moose Lake
*Kraft, Peter	Duluth
Krueger, V. R.	Nopeming
La Bree, R. H.	Duluth
Laikola, L. A.	Soudan
Laird, A. T.	Duluth
Lenont, C. B.	Virginia
Lepak, F.	Duluth
Litman, S. N.	Duluth
Loofbourrow, E. H.	Keewatin
Macfarlane, P. H.	Chisholm
†MacRae, G. C.	Duluth
Magnay, F. H.	Duluth
Magraw, R. M.	Two Harbors
Malmstrom, J. A.	Virginia
Manley, J. R.	Duluth
†Marcley, W. J.	Minneapolis
†Martin, W. C.	Duluth
†Mayne, R. M.	Duluth
McCarty, P. D.	Ely
†McCoy, Mary K.	Duluth
McDonald, A. L.	Duluth
McHaffie, O. L.	Duluth
McKenna, M. J.	Grand Rapids
McLeod, J. L.	Grand Rapids
McNutt, J. R.	Duluth
†Mead, C. H.	Duluth
Merriman, L. L.	Duluth
†Meyer, J. O.	Grand Rapids
Miners, G. A.	Deer River
†Minkler, J. E.	Virginia
Minty, Earl W.	Duluth
Moe, R. J.	Duluth
Moe, Thomas	Moose Lake
†Mollers, T. P.	Mountain Iron
Monroe, P. B.	Cloquet
†Monserud, N. O.	Cloquet
More, C. W.	Eveleth
Morsman, L. W.	Hibbing
Mueller, R. F.	Two Harbors
Mueller, Selma C.	Duluth
Neff, W. S.	Virginia
Nelson, E. H.	Chisholm

MINNESOTA MEDICINE

# ROSTER 1945

†Nelson, L. S.	Hibbing	Virginia	Gilbert
†Nelson, R. L.	Duluth	Duluth	Grand Rapids
Nicholson, M. A.	Duluth	Hibbing	Duluth
Norberg, C. E.	Cloquet	Duluth	Cloquet
Nutting, R. E.	Duluth	Duluth	Ely
Olson A. E.	Duluth	Duluth	Grand Rapids
Olson, A. O.	Duluth	Duluth	Virginia
Palmer, H. A.	Black Duck	Virginia	Duluth
†Parker, O. W.	Duluth	Nopeming	Nopeming
†Parson, E. I.	Duluth	Iowa City, Ia.	Duluth
†Parker, W. H.	Chisholm	Duluth	Tilderquist, D. L.
Pasek, A. W.	Cloquet	Long Beach, Calif.	Hibbing
†Patch, O. B.	Duluth	Duluth	Middle River
†Patterson, S. A.	Duluth	Duluth	Hibbing
Pearshall, R. P.	Virginia	Hibbing	Duluth
†Pedersen, R. C.	Duluth	Duluth	Tuohy, E. L.
Pennie, D. F.	Duluth	Duluth	Urberg, S. E.
Peterson, E. N.	Virginia	Virginia	Duluth
†Peterson, J. H.	Duluth	Virginia	Floodwood
Pfuetze, K. H.	Cannon Falls	Virginia	Duluth
Plowman, E. T.	Marble	Virginia	Walker, A. E.
Power, J. E.	Duluth	Virginia	Wallace, M. O.
Puumala, R. H.	Cloquet	Virginia	Wells, A. H.
Raadquist, C. S.	Hibbing	Virginia	Wheeler, D. W.
Rademaker, William	Tacoma, Wash.	Virginia	Williams, J. A.
Raihala, John	Virginia	Virginia	Winter, J. A.
Raiter, R. F.	Cloquet	Virginia	Duluth
†Robinson, J. M.	Corning, N. Y.	Virginia	Young, T. O.
			Zemen, E. W.
			Zlatovski, M. L.

## SCOTT-CARVER COUNTY MEDICAL SOCIETY

Regular meetings, second Tuesday of the alternate months

Annual meeting, June

Number of Members: 33

President		
Pearson, B. F.	Shakopee	Belle Plaine
Secretary		Shakopee
Schimelpfenig, G. T.	Chaska	Kortsch, F. P.
†Bodaski, A. A.	Montgomery	Prior Lake
Bratholdt, J. W.	Watertown	†Krieser, A. E.
Buck, F. H.	Shakopee	Boyd
Cervenka, C. F.	New Prague	†Kucera, L. J.
†Dworak, A. F.	St. Paul	Lonsdale
Emmerson, W. S.	Mayer	Kucera, S. T.
Havel, H. W.	Jordan	Maertz, W. F.
Hebeisen, M. B.	Chaska	St. Paul
		Martin, T. P.
		Arlington
		Nagel, H. D.
		Waconia
		†Nelson, K. L.
		Montgomery
		Ninneman, N. N.
		Waconia
		Novak, E. E.
		New Prague

## SOUTHWESTERN MINNESOTA MEDICAL SOCIETY

Cottonwood, Jackson, Murray, Nobles, Pipestone and Rock Counties

Regular meetings, March and October.

Annual meeting, October

Number of Members: 57

President		Brewster
Williams, C. A.	Pipestone	Harrison, P. W.
Secretary		Worthington
Mork, B. O., Jr.	Worthington	†Hebel, Robert
		Minneapolis
Anderson, O. W.	Luverne	Heiberg, O. M.
Arnold, E. W.	Adrian	Worthington
†Balmer, A. I.	Pipestone	Hitchings, W. S.
Basinger, H. P.	Windom	†Hoyer, L. J.
Basinger, H. R.	Mountain Lake	Windom
†Beckering, Gerrit.	Edgerton	Kabrick, O. A.
Benjamin, W. G.	Pipestone	Worthington
Bofenkamp, F. W.	Luverne	Kilbride, E. A.
Brown, A. H.	Pipestone	Lohmann, J. G.
Carlson, J. V.	Westbrook	*Maitland, D. P.
†Chadbourne, A. G.	Heron Lake	Jackson
†Chunn, S. S.	Pipestone	Maitland, E. T.
DeBoer, Hermanus.	Edgerton	Jackson
†Doman, V. W.	Lakefield	†Manson, F. M.
Doms, H. C. A.	Slayton	Worthington
Hallin, R. P.	Worthington	*McLane, Evelyn G.
Halloran, W. H.	Jackson	Cambridge
		Mork, B. O., Jr.
		Worthington
		Mork, B. O., Sr.
		Worthington
		Nealy, D. E.
		Adrian
		†Pankratz, P. J.
		Mountain Lake
		Pierson, R. F.
		Slayton
		Piper, W. A.
		Mountain Lake
		Rogers, C. W.
		Heron Lake
		Rose, J. T.
		Lakefield

## STEARNS-BENTON COUNTY MEDICAL SOCIETY

Regular meetings, third Thursday of the month

Annual meeting, third Thursday of December

Number of Members: 52

President		St. Cloud
Engstrom, G. F.	Belgrade	Grant, J. C.
Secretary		Sauk Center
Libert, J. N.	St. Cloud	Haberman, Emil
Barnett, J. M.	Cold Spring	Oaks
Baumgartner, F. H.	Albany	Halenbeck, P. L.
Beuning, J. B.	St. Cloud	St. Cloud
Brigham, C. F.	St. Cloud	†Hemstead, Werner
Buscher, J. C.	St. Cloud	Fergus Falls
Clark, H. B.	St. Cloud	Henry, C. J.
Donaldson, C. S.	Foley	Milaca
DuBois, J. F.	Sauk Center	Jones, R. N.
Engstrom, G. F.	Belgrade	St. Cloud
Evans, L. M.	Sauk Rapids	†Kern, M. C.
Fleming, T. N.	St. Cloud	Freeport
Freeman, W. L.	St. Cloud	Sauk Center
Friesleben, William	Sauk Rapids	Kohler, D. W.
Gaida, J. B.	St. Cloud	St. Joseph
†Goehrs, G. H.	St. Cloud	Koop, S. H.
		Richmond
		Lewis, C. B.
		St. Cloud
		Libert, J. N.
		St. Cloud
		Luckemeyer, C. J.
		St. Cloud
		Mahowald, A.
		Albany
		†Mattson, A. D.
		Milaca
		McDowell, J. P.
		St. Cloud
		Meyer, A. A.
		Melrose
		†Moos, D. J.
		Minneapolis

Strather, M. L.	Gilbert
†Stewart, D. E.	Grand Rapids
Strobel, W. G.	Duluth
Stuart, A. B.	Cloquet
Sutherland, H. N.	Ely
Sutton, Janet B.	Grand Rapids
†Swanson, P. E.	Virginia
Swedberg, W. A.	Duluth
†Swenson, A. O.	Duluth
Taylor, C. W.	Duluth
Terrell, B. J.	Nopeming
†Tibbets, M. H.	Duluth
Tilderquist, D. L.	Duluth
Tingdale, Carlyle	Hibbing
†Trottier, E. G.	Middle River
†Tudor, R. B.	Hibbing
Tuohy, E. L.	Duluth
Urberg, S. E.	Duluth
†Van Valkenberg, J. D.	Floodwood
†Walker, A. E.	Duluth
Wallace, M. O.	Duluth
Wells, A. H.	Duluth
†Wheeler, D. W.	Duluth
†Williams, J. A.	Hibbing
Winter, J. A.	Duluth
Young, T. O.	Duluth
Zemen, E. W.	Hibbing
Zlatovski, M. L.	Duluth

†Olson, C. J.	Belle Plaine
Pearson, B. F.	Shakopee
Phillips, W. H.	Jordan
Pogue, R. E.	Watertown
†Ponterio, J. E.	Shakopee
Reiter, H. W.	Shakopee
Schimelpfenig, G. T.	Chaska
†Shadrack, J. S.	Lamberton
Simons, B. H.	Chaska
Westerman, A. E.	Montgomery
Westerman, F. C.	Montgomery
Wiechman, F. H.	Montgomery
Wunder, H. E.	Shakopee

†Schade, F. L.	Worthington
Schutz, E. S.	Mountain Lake
†Schmidt, W. R.	Worthington
Sether, A. F.	Ruthhton
Sherman, C. L.	Luverne
†Sjostrom, L. E.	Storden
Slater, S. A.	Worthington
†Smith, G. G.	Fulda
Sogge, L. L.	Windom
Sorum, F. T.	Jasper
Stanley, C. R.	Worthington
Stevenson, B. M.	Fulda
Stratte, H. C.	Windom
†Taylor, E. S.	Worthington
Toft, Josephine.	Faribault
Waller, J. D.	Wilmont
†Wells, W. B.	Jackson
Williams, C. A.	Pipestone
Williams, L. A.	Slayton
†Wilson, I. H.	Worthington
†Wright, C. O.	Luverne

# ROSTER 1945

## STEELE COUNTY MEDICAL SOCIETY

Regular meetings, at call  
Annual meeting, January  
Number of Members: 14

President	
Nelson, E. J.	Owatonna
Secretary	
Kurtin, H. J.	Blooming Prairie
†Berghs, L. V.	Owatonna

Dewey, D. H.	Owatonna
Ertel, E. Q.	Ellendale
Hartung, E. H.	Claremont
Kurtin, H. J.	Blooming Prairie
McEnaney, C. T.	Owatonna
McIntyre, J. A.	Owatonna
Melby, Benedik	Blooming Prairie

Morehead, D. E.	Owatonna
Nelson, E. J.	Owatonna
†Roberts, O. W.	Owatonna
Schaefer, J. F.	Owatonna
Senn, E. W.	Owatonna
†Stransky, T. W.	Owatonna
Wilkowske, R. J.	Owatonna

## UPPER MISSISSIPPI MEDICAL SOCIETY

Aitkin, Beltrami, Cass, Clearwater, Crow Wing, Hubbard  
Koochiching, Lake of the Woods, Morrison, Todd and Wadena Counties  
Regular meetings, Spring, Summer, Fall, Winter  
Annual meeting, February  
Number of Members: 98

President	
Thabes, J. A., Jr.	Brainerd
Secretary	

†Gilmore, Rowland	Bemidji
Grogan, J. S.	Wadena
Groschupf, T. P.	Bemidji
Grose, F. N.	Clarissa

Nelson, N. P.	Brainerd
†Nolan, D. E.	Dayton, Ohio

†O'Leary, J. H.	Staples
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President	
Badeaux, G. I.	Brainerd
Beise, R. A.	Brainerd
Borgerson, A. H.	Long Prairie
Bosland, H. G.	Verndale
†Bray, K. E.	Park Rapids
†Burns, H. A.	Minneapolis

†Cardle, G. E.	Brainerd
Carlson, C. E.	Alexandria
†Christie, G. R.	Long Prairie
Christie, R. L.	Long Prairie
Cook, J. M.	Staples
†Coombs, C. H.	Cass Lake
†Corrigan, J. E.	Spooner
Crow, E. R.	Ah-Gwah-Ching

Nelson, N. P.	Brainerd
†Nolan, D. E.	Dayton, Ohio

President	
Badeaux, G. I.	Brainerd
Beise, R. A.	Brainerd
Borgerson, A. H.	Long Prairie
Bosland, H. G.	Verndale
†Bray, K. E.	Park Rapids
†Burns, H. A.	Minneapolis

†Idstrom, L. G.	Minneapolis
Jamieson, E. F.	Brainerd
†Johnson, C. E.	Pine River
Johnson, D. L.	Little Falls
Johnson, E. W.	Bemidji

Quanstrom, V. E.	Brainerd
†Ratcliffe, J. J.	Aitkin

President	
†East, John	Northome
Eiler, John	Park Rapids
Englund, D. W.	Wadena
Eyres, T. E.	Pequot

Knight, E. G.	Swanville
†Knights, J. A.	Bemidji
†Koskela, L. E.	Sebeka
Larson, L. J.	Bagley
Laughlin, J. T.	Grey Eagle
Lee, H. W.	Brainerd
Leemhuis, G. H.	Aitkin
Leggett, Elizabeth A.	Ah-Gwah-Ching
Lenarz, A. J.	Browerville
Lund, W. J.	Staples

Thabes, J. A., Jr.	Brainerd
Trommald, Gladys B. K.	Jacksonville, Ill.

President	
Fait, R. V.	Little Falls
Fitzsimons, W. E.	Brainerd
Frost, H. T.	Wadena

†Mark, Hilbert	Minneapolis
†Mason, J. A.	International Falls
McCann, D. F.	Bemidji
Mithy, I. L.	Aitkin
Monahan, R. H.	International Falls
Mosby, M. E.	Long Prairie
†Mulligan, A. M.	Brainerd
†Murray, R. A.	Aitkin

Watson, A. M.	Royalton
Watson, J. D.	Minneapolis

President	
Garlock, A. V.	Bemidji
Garlock, D. H.	Bemidji
Gerber, M. P.	Brainerd
Ghostley, Mary C.	Puposky
†Gifford, B. L.	Long Prairie

Bouquet, B. J.	Wabasha
†Bowers, R. N.	Lake City
†Cochrane, W. J.	Lake City
Collins, J. S.	Wabasha
†Dempsey, D. F.	Kellogg
Ellis, E. W.	Elgin
†Flesche, B. A.	Lake City

Glace, R. A.	Plainview
†Holt, G. W.	Wabasha

President	
Wilson, W. F.	Lake City
Bayley, E. C.	Lake City

Collins, J. S.	Wabasha
†Dempsey, D. F.	Kellogg
Ellis, E. W.	Elgin
†Flesche, B. A.	Lake City

Whittemore, D. D.	Bemidji
Will, C. B.	Bertha

President	
Wadd, C. T.	Janesville
Secretary	
Oeljen, S. C. G.	Waseca

Gallagher, B. J.	Waseca
†Hottinger, R. C.	Janesville
McIntire, H. M.	Waseca
Oeljen, S. C. G.	Waseca

Olds, G. H.	Waseca
Spittler, R. O.	New Richland

President	
Boley, E. S.	Stillwater
Boley, E. S.	Stillwater
†Carlson, R. E.	Stillwater
Haines, J. H.	Stillwater

Holcomb, J. T.	Marine-on-St. Croix
Humphrey, W. R.	Stillwater
Johnson, R. G.	Stillwater
Josewski, R. J.	Stillwater
Kalinoff, D.	Stillwater
McCarter, F. M.	Stillwater
*Mingo, F. E.	Hugo
†Moir, W. W.	Stillwater

Poirier, J. A.	Forest Lake
†Ruggles, G. McC.	Forest Lake

President	
Wadd, C. T.	Janesville
Secretary	
Oeljen, S. C. G.	Waseca

†Samson, E. R.	Stillwater
Sherman, C. H.	Stillwater
Stuhr, J. W.	Stillwater
Van Meier, Henry	Stillwater
Wilkinson, Stella L.	Moose Lake

President	
Wadd, C. T.	Janesville
Secretary	
Oeljen, S. C. G.	Waseca

†Spangler, C. H.	Stillwater
†Trotter, J. W.	Stillwater
Wadd, C. T.	Janesville
Wadd, C. T.	Janesville

President	
Johnson, R. G.	Stillwater
Secretary	
Boley, E. S.	Stillwater
Boley, E. S.	Stillwater

†Whittemore, D. D.	Bemidji
Will, C. B.	Bertha
Will, W. W.	Bertha
Wilson, V. O.	Minneapolis
†Wingquist, C. G.	Crosby

President	





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ROSTER 1945

WATONWAN COUNTY MEDICAL SOCIETY

**AN COUNTY MEDICAL  
Regular meeting, at call**

## Annual meeting, November

Number of Members: 5

President	Bergman, O. B.	St. James	Grimes, H. B.	Madelia
Bergman, O. B.	.....	St. James	Hagen, O. E.	Butterfield
Secretary	Bratrude, E. J.	St. James	*McCarthy, W. J.	Madelia
Grimes, H. B.	.....	St. James		
	Bregel, F. L.	St. James		

## WEST CENTRAL MINNESOTA MEDICAL SOCIETY

Big Stone, Pope, Stevens, and Traverse Counties

Regular meetings, second Wednesday, March, May, September and November

**Annual meeting, September  
Number of Members: 35**

Number of Members: 25

<b>President</b>		Doleman, N. F.	Tintah	Magnusen, A. E.	Wheaton
Arneson, A. I.	Morris	Eberlin, E. A.	Glenwood	†Merrill, Robert	. Morris
<b>Secretary</b>		Elsey, E. McC.	Glenwood	McIver, B. A.	. Lowry
Linde, Herman	Cyrus	Elsey, J. R.	Glenwood	Mooney, L. P.	Graceville
		*Ewing, C. F.	Wheaton	†Muir, W. F.	Graceville
		Fitzgerald, E. T.	Morris	O'Donnell, D. M.	Ortonville
Arneson, A. I.	Morris	†Garrow, D. M.	St. Paul	*Oliver, C. I.	Graceville
Behmfer, F. W.	Morris	†Giesen, A. F.	Starbuck	Oliver, I. L.	Graceville
Bergan, Otto	Clinton	Karn, B. R.	Ortonville	Ransom, M. L.	Hancock
Bolsta, Charles	Ortonville	Lindberg, A. L.	Wheaton	Rydburg, W. C.	Brooten
†Dahle, M. B.	Glenwood	Linde, Herman	Cyrus	Ryding, V. T.	Starbuck

**WINONA COUNTY MEDICAL SOCIETY**

Regular meetings, first Monday in January, April, July, October

Annual meeting, first Monday in January  
Number of Members: 30

Number of Members: 29

<b>President</b>	Winona	Heise, W. V.	Winona	Page, R. L.	St. Charles
Heise, Herbert	Winona	Johnston, L. F.	Winona	Robbins, C. P.	Winona
<b>Secretary</b>		Keyes, J. D.	Winona	†Roemer, H. J.	Winona
Meinert, A. E.	Winona	Loomis, G. L.	Winona	†Roth, F. D.	Lewiston
Benoit, F. T.	Winona	†Lundquist, C. W.	Winona	Satterlee, H. W.	Lewiston
Bruder, V. F.	Winona	†Mattison, P. A.	Winona	Schaerer, Samuel	Winona
Christensen, E. E.	Winona	McLaughlin, E. M.	Winona	Steiner, I. W.	Winona
†Hamlon, J. S.	St. Charles	Meinert, A. E.	Winona	Tweedy, G. J.	Winona
Heise, Herbert	Winona	†Meyer, W. M.	Winona	†Tweedy, R. B.	Winona
Heise, Paul	Winona	Nauth, B. S.	Winona	Wilson, R. H.	Winona
Heise, W. F. C.	Winona	Neumann, C. A.	Winona	†Younger, L. I.	Winona

WRIGHT COUNTY MEDICAL SOCIETY

Regular meetings, quarterly  
meetings, first Tuesday in

Annual meeting, first Tuesday in October  
Number of Members: 17

Number of Members: 1

Rolig, D. H.	President	Catlin, T. J.	Buffalo	Peterson, O. L.	Cokato
	Howard Lake	Ellison, F. E.	Monticello	*Phillips, A. E.	Delano
	Secretary	Greenfield, W. T.	Delano	Ridgway, A. M.	Annandale
Catlin, J. J.	Buffalo	Grundset, O. J.	Montrose	Roholt, C. L.	Waverly
†Anderson, W. P.	Buffalo	†Guilfoile, P. J.	Delano	Rolig, D. H.	Howard Lake
Bendix, L. H.	Annandale	Harriman, L.	Howard Lake	Swezey, B. F.	Buffalo
Catlin, J. J.	Buffalo	†Hart, W. E.	Monticello	Thielen, R. D.	St. Michael
		Lee, J. L.	Alexandria	Thompson, Arthur	Cokato

# ALPHABETIC ROSTER

**Key to Symbols:** \*Decesed; †Affiliate or Associate; ‡In Service; ★Died in Service

Aagaard, G. N., Jr.	Minneapolis	†Ayres, G. T.	Ely	Benson, A. J.	Rochester
Aanes, A. M.	Red Wing	†Bahb, F. S.	Rochester	Benson, R. E.	Rochester
†Abbott, C. B.	Springfield	Bachnik, F. W.	Hibbing	Bentley, N. P.	St. Paul
Abbott, J. S.	St. Paul	Backus, R. W.	Nothrending	†Benton, P. C.	Gibson
†Aborn, W. H.	Hawley	Bacon, D. K.	St. Paul	Bepko, Marie K.	Cloquet
Abraham, A. L.	Duluth	Bacon, J. F.	Rochester	Berdez, G. L.	Duluth
Abramson, Milton	Minneapolis	†Bacon, L. C.	St. Paul	Bergan, Otto	Clinton
†Adair, A. F., Jr.	St. Paul	Badeaux, G. I.	Braimond	Berge, D. O.	Roseau
Adams, B. S.	Hibbing	Baggensost, A. H.	Rochester	Bergen, C. T.	Brainerd
Adams, R. C.	Bird Island	†Bagley, C. M.	Duluth	Berger, A. G.	Minneapolis
Adams, R. C.	Rochester	Bagley, Elizabeth C.	Duluth	†Bergh, G. S.	Minneapolis
†Addy, E. R.	Gilbert	Bagley, W. R.	Duluth	Bergh, L. N.	Montevideo
Adkins, C. D.	Minneapolis	Baich, V. M.	Bovey	†Berghs, L. V.	Owatonna
Adkins, C. M.	Thief River Falls	Bailey, H. B.	Fairmont	Bergman, O. B.	St. James
Adkins, G. H.	Pine River	†Bailey, R. B.	Fairmont	Bergquist, K. E.	Battle Lake
Adson, A. W.	Rochester	Bair, H. L.	Rochester	Berkman, D. M.	Rochester
Affeldt, D. E.	Kasson	Baird, J. W.	Minneapolis	Berkman, J. M.	Rochester
†Ahl, C. W.	Hibbing	Baken, M. P.	Minneapolis	†Berkwitz, N. J.	Minneapolis
Ahlfs, J. J.	Caledonia	Baker, A. B.	Minneapolis	Berlin, A. S.	Hallock
Ahrens, J. A.	St. Paul	Baker, A. C.	Fergus Falls	†Berman, Reuben	Minneapolis
Ahrens, A. H.	St. Paul	Baker, A. T.	Minneapolis	Bernstein, W. C.	St. Paul
†Aita, J. A.	Rochester	Baker, E. L.	Minneapolis	Bertelson, O. L.	Crookston
Aitkens, H. B.	Le Center	†Baker, G. S.	Rochester	†Bessesen, A. N., Jr.	Minneapolis
Akester, Ward	Nashawauk	Baker, H. R.	Hayfield	†Bessesen, D. H.	Minneapolis
Akins, W. M.	Eveleth	Baker, Jeannette L.	Fergus Falls	Bessesen, W. A.	Minneapolis
†Albers, G. D.	Rochester	Baker, Looe	Minneapolis	Beuning, J. B.	St. Cloud
Alberts, M. W.	St. Paul	Baker, N. H.	Fergus Falls	Bianco, A. J.	Duluth
Albrecht, H. H.	Floodwood	Baker, R. L.	Hayfield	Bianco, J. J.	Rochester
Alden, J. F.	St. Paul	†Bakkila, H. E.	Duluth	Bicek, J. F.	St. Paul
†Aldes, J. H.	St. Paul	†Balcombe, M. M.	St. Paul	Bickel, W. H.	Rochester
Aldrich, C. A.	Rochester	†Balldigo, E. M.	Red Wing	Biedermann, Jacob	Thief River Falls
†Alexander, F. H.	St. Paul	Balfour, D. C.	Rochester	Bieter, R. N.	Minneapolis
†Alexander, H. A.	Minneapolis	†Balfour, D. C., Jr.	Rochester	Bigelow, C. E.	Dodge Center
†Aling, C. A.	Minneapolis	†Balkin, S. G.	Minneapolis	Billings, R. E.	Franklin
Aling, C. P.	Minneapolis	†Balmer, A. I.	Pipstone	Binet, H. E.	Grand Rapids
Allen, C. C.	Austin	†Banner, E. A.	Rochester	Binger, H. E.	St. Paul
†Allen, E. V. N.	Rochester	†Barber, J. P.	Minneapolis	Binger, M. W.	Rochester
Allen, H. W.	Minneapolis	Bardon, Richard	Duluth	Birnberg, T. L.	St. Paul
Allen, H. B.	Austin	Bargen, J. A.	Rochester	Black, A. S., Jr.	Rochester
Allison, R. G.	Minneapolis	Barker, N. W.	Rochester	Black, B. M.	Rochester
Altnow, H. O.	Minneapolis	Barnes, A. R.	Rochester	†Black, W. A.	Minneapolis
Alvarez, W. C.	Rochester	†Barnes, R. G., Jr.	Hastings	Blackmore, S. C.	Minneapolis
Amberg, Samuel	Rochester	Barnett, J. M.	Cold Spring	Blaisdell, J. S.	Rochester
†Amrusko, J. S.	Rochester	Barney, L. A.	Duluth	Blake, James	Hopkins
Amundsen, A. E.	Little Falls	Barr, L. C.	Albert Lea	†Blake, James A.	Hopkins
Andersen, A. G.	Minneapolis	Barr, M. M.	Rochester	Blakely, C. C.	Barnum
Andersen, S. C.	Minneapolis	†Barr, R. N.	St. Paul	Blakey, A. R.	Osakis
†Anderson, C. D.	Rochester	Barr, W. H.	Wells	*Blanchard, H. G.	Fairmont
†Anderson, C. L.	Duluth	†Barrett, E. E.	Duluth	Bloedel, T. J.	Osseo
Anderson, D. D.	Minneapolis	Barron, Moses	Minneapolis	Bloomberg, W. R.	Princeton
†Anderson, D. P., Jr.	Austin	Barry, L. W.	St. Paul	Blumenthal, J. S.	Minneapolis
Anderson, E. D.	Minneapolis	Barness, Nellie O. N.	St. Paul	Blumenthal, L. S.	Rochester
†Anderson, Earl M.	Rochester	Basinger, H. P.	Windom	†Blumgren, J. E.	Duluth
†Anderson, Edward M.	Lamberton	Basinger, H. R.	Mountain Lake	†Blumstein, Alex	Minneapolis
Anderson, E. R.	Minneapolis	*Bass, G. W.	Minneapolis	†Boardman, D. V.	Twin Valley
Anderson, F. J.	Minneapolis	Bateman, Olive A. L.	Minneapolis	Bock, R. A.	St. Paul
Anderson, H. A.	Rochester	†Batty, J. L.	Hibbing	Bockman, M. W. H.	Minneapolis
Anderson, H. R.	Deer River	Baumgartner, F. H.	Albany	†Bodaski, A. A.	Montgomery
Anderson, J. K.	Minneapolis	Baxter, S. H.	Minneapolis	Boeckmann, Egil	St. Paul
Anderson, K. W.	Minneapolis	Bayard, H. F.	Minneapolis	Boehrer, J. J.	Minneapolis
Anderson, L. E.	Rochester	Bayle, E. C.	Lake City	Bofenkamp, F. W.	Luverne
Anderson, M. J.	Rochester	Beach, Northrop	Minneapolis	Boies, L. R.	Minneapolis
Anderson, M. W.	Rochester	Beals, Hugh	St. Paul	Bolender, H. L.	St. Paul
Anderson, O. W.	Luverne	†Beard, A. H.	Minneapolis	Bolyn, E. S.	Stillwater
Anderson, P. A.	Minneapolis	†Beard, Crowell	Rochester	Boline, C. A.	Battle Lake
Anderson, R. E.	Willmar	Bechtel, M. J.	Warren	Bolsta, Charles	Ortonville
Anderson, S. H.	Red Wing	Becker, Arnetta M.	Minneapolis	Boman, P. G.	Duluth
†Anderson, U. S.	Minneapolis	†Becker, F. T.	Duluth	Boody, G. L., Jr.	Dawson
†Anderson, W. E.	Thief River Falls	Beckering, Gerrit	Edgerton	Booth, A. E.	Minneapolis
†Anderson, W. P.	Buffalo	†Beckjord, P. R.	Willmar	Boothby, W. M.	Rochester
Anderson, W. S.	Northfield	Beckman, W. G.	Minneapolis	Boreen, C. A.	Minneapolis
†Andreassen, E. C.	Minneapolis	Bedford, E. W.	Minneapolis	†Borg, J. F. A.	St. Paul
Andresen, K. D.	Minneapolis	Beech, R. H.	St. Paul	Borgerson, A. H.	Long Prairie
Andrews, R. N.	Mankato	†Beek, H. O.	St. Paul	Borgerson, M. A.	Hanley Falls
Andrews, R. S.	Minneapolis	†Beer, J. I.	St. Paul	Borges, E. J.	Minneapolis
Arends, A. L.	Jamestown, N. D.	Behmier, F. W.	Morris	Borman, C. N.	Minneapolis
Arey, S. L.	Minneapolis	Behr, O. K.	Crookston	Borowicz, L. A.	Minneapolis
†Arko, J. L.	Chisholm	Beise, R. A.	Brainerd	Bosland, H. G.	Verndale
†Arlander, C. E.	Minneapolis	†Beizer, L. H.	Rochester	Bossett, C. S.	Mora
Arling, L. S.	Minneapolis	Bell, C. C.	St. Paul	Bottolfsen, B. T.	Moorhead
†Arling, P. A.	Minneapolis	†Bell, E. T.	Minneapolis	Bouma, L. R.	St. Paul
Armstrong, E. L.	Duluth	Belote, G. B.	Caledonia	†Bouman, H. A. H.	Minneapolis
†Armstrong, J. M.	St. Paul	†Belzer, M. S.	Minneapolis	Bouquet, B. J.	Wabasha
Arndt, H. W.	Detroit Lakes	Bender, J. H.	Big Fork	Bowen, R. L.	Hibbing
Arneson, A. I.	Morris	Bendix, L. H.	Annandale	†Bowers, R. N.	Lake City
Arnold, Ann W.	Minneapolis	Benedict, W. L.	Rochester	Bowing, H. H.	Rochester
Arnold, D. C.	Minneapolis	Benepe, J. L.	St. Paul	Boyd, L. M.	Alexandria
Arnold, E. W.	Adrian	Benesh, L. A.	Minneapolis	Boyer, S. H.	Duluth
Arnquist, A. S.	St. Paul	Benesh, N. G.	Minneapolis	Boyer, S. H., Jr.	Duluth
Arnson, J. M.	Benson	Benjamin, A. E.	Minneapolis	Boynton, Ruth E.	Minneapolis
†Arny, F. P.	Preston	Benjamin, E. G.	Minneapolis	Boysen, Herhert	Madelia
Arvidson, C. G.	Minneapolis	†Benjamin, H. G.	Minneapolis	†Boysen, J. E.	Pelican Rapids
†Arzt, P. K.	St. Paul	Benjamin, W. G.	Pipstone	Boysen, Peter	Pelican Rapids
†Ashburn, F. S.	Rochester	Benn, F. G.	Minneapolis	Braasch, W. F.	Rochester
Athens, A. G.	Duluth	†Bennett, J. G.	Rochester	†Bradshaw, S. P.	Rochester
†Atwater, J. S.	Rochester	†Bennett, J. K.	Rochester	Brand, G. D.	St. Paul
Aune, Martin	Minneapolis	†Bennett, W. A.	Rochester	Brand, W. A.	Redwood Falls
Aurand, W. H.	Minneapolis	Bennion, P. H.	St. Paul	Bransom, D. S.	Albert Lea
Aurelius, J. R.	St. Paul	Benoit, F. T.	Winona	Branton, A. F.	Willmar
Ausman, C. F.	St. Paul			Branton, B. J.	Willmar

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Bratrud, Edward	Thief River Falls	Carlson, J. V.	Westbrook	Duluth
Bratrude, E. J.	St. James	Carlson, Lawrence	Minneapolis	Duluth
Braun, O. C.	Nashwaak	Carlson, L. T.	Minneapolis	Mahnomen
Braverman, N. J.	Duluth	†Carlson, R. E.	Stillwater	Minneapolis
Bray, E. R.	St. Paul	Carmen, J. E.	Detroit Lakes	N. St. Paul
Bray, K. E.	Park Rapids	†Carmona, M. G.	Rochester	Cox, W. B.
Bray, P. N.	Duluth	Caron, R. P.	Minneapolis	Rochester
Bray, R. B.	Biwabik	Carr, D. T.	Rochester	†Cragg, R. W.
Bregel, F. L.	St. Paul	Carroll, W. C.	St. Paul	†Craig, W. McK.
†Brekke, H. J.	Minneapolis	Carrver, H. M.	Rochester	Cranmer, R. R.
Briggs, J. F.	Rochester	Carstens, C. F.	Hibbing	†Cranston, R. W.
Briggs, Natalie M.	St. Paul	†Caspers, C. G.	Minneapolis	Creevy, C. D.
Brigham, C. F.	Watkins	Catlin, J. J.	Buffalo	†Creighton, R. H.
Brigham, F. T.	St. Cloud	Catlin, T. J.	Buffalo	Crenshaw, J. L.
†Bindley, George V., Jr.	Rochester	†Cavanor, F. T.	Minneapolis	Crewe, J. E.
Brink, A. A.	Baudette	†Ceder, E. T.	Rochester	Critchfield, L. R.
†Brink, D. M.	Isle	†Ceplecha, S. F.	Redwood Falls	Crombie, F. J.
Broadie, T. E.	St. Paul	†Cervenka, C. F.	New Prague	†Cronkite, A. E.
Broders, A. C.	Rochester	†Chadbourne, A. G.	Heron Lake	Cronwell, B. J.
Brodie, W. D.	St. Paul	†Chadbourne, C. R.	St. Paul	Crow, E. R.
Broker, W. S.	Wadena	†Challman, S. A.	Minneapolis	Crump, J. W.
Brooks, C. N.	Minneapolis	Chambers, W. C.	Blue Earth	Culligan, J. M.
†Brooksy, W. A.	Rochester	†Chapman, A. S.	Rochester	Cumming, H. A.
Brown, A. E.	Rochester	Chapman, T. L.	Duluth	†Cummings, D. W.
Brown, A. H.	Pipestone	Chatterton, C. C.	St. Paul	†Cunningham, B. P.
*Brown, E. D.	Paynesville	Chermak, F. G.	International Falls	†Cunningham, C. B.
*Brown, E. I.	St. Paul	Chesley, A. J.	St. Paul	†Curtin, J. F.
Brown, G. E., Jr.	Pine City	†Christensen, C. H.	Duluth	Curtis, R. A.
Brown, H. A.	Rochester	Christensen, E. E.	Winona	†Cusick, P. L.
Brown, J. C.	St. Paul	†Christensen, E. P.	Two Harbors	†Custer, M. D., Jr.
†Brown, J. R.	Rochester	Christensen, N. A.	Rochester	Cutts, George
Brown, L. L.	Crookston	Christenson, G. R.	Minneapolis	
Brown, M. H.	Rochester	Christiansen, Andrew	St. Paul	
†Brown, P. W.	Rochester	Christianson, H. W.	Minneapolis	
Brown, S. P.	Minneapolis	†Christie, G. R.	Long Prairie	Dack, L. G.
Brown, W. D.	Minneapolis	Christie, R. L.	Long Prairie	Dady, E. E.
†Browne, H. C., Jr.	Rochester	†Christison, J. T.	St. Paul	Dafoe, W. A.
†Browning, W. H.	Rochester	†Chunn, S. S.	Pipestone	Dahl, E. O.
Brownstone, Manuel	Sandstone	Ciaromelli, Letizia C.	Rochester	Dahl, G. A.
Bruder, V. F. J.	Winona	Clagett, O. T.	Rochester	Dahl, J. A.
Brunsting, L. A.	Rochester	†Clapp, Stewart	Duluth	†Dahle, M. B.
Brusegard, J. F.	Red Wing	Clark, F. F.	Duluth	Dahleen, H. C.
†Brutsch, G. C.	Minneapolis	Clark, H. B.	St. Cloud	Dahlin, I. T.
†Bryant, F. L.	Minneapolis	†Clark, H. B., Jr.	St. Paul	Daignault, Oscar
†Byron, D. A.	Rochester	†Clark, H. S.	Minneapolis	Daniel, D. H.
†Buchstein, H. F.	Minneapolis	Clark, L. W.	Spring Valley	Danielson, K. A.
Buck, F. H.	Shakopee	†Clarke, E. T.	Rochester	Danielson, Lennox
†Buck, R. M.	Rochester	†Clarkson, W. R.	Rochester	Darling, J. P.
Buckley, R. P.	Duluth	†Clay, L. B.	Minneapolis	†Daugherty, E. B., Marine-on-St. Croix
Buie, L. A.	Rochester	Claydon, H. F.	Red Wing	†Daugherty, G. W.
†Bulinski, T. J.	St. Paul	Claydon, L. E.	Red Wing	St. Paul
Bukley, Kenneth	Minneapolis	†Cleaves, W. D.	Grand Rapids	†Daugherty, L. E.
Bunker, B. W.	Anoka	†Clegg, R. S.	Duluth	Rochester
†Burch, E. P.	St. Paul	Clement, J. B.	Lester Prairie	Davies, R. J.
Burch, F. E.	St. Paul	†Cleveland, W. H.	Rochester	Davies, A. C.
†Burchell, H. B.	Rochester	Clifford, G. W.	Alexandria	Davies, E. V.
Burkhart, R. J.	Rochester	Clifton, T. A.	Chatfield	*Davis, Herbert
†Burlingame, D. A.	Minneapolis	Clothier, E. F.	Elk River	Davis, I. G.
Burnap, W. L.	Fergus Falls	†Cluxton, H. E., Jr.	Rochester	Rushford
†Burns, F. M.	Milan	†Cochrane, B. B.	St. Paul	†Davis, J. C.
†Burns, H. A.	Minneapolis	†Cochrane, R. F.	Minneapolis	Wadea, Wadena
†Burns, L. S.	So. St. Paul	†Cochrane, W. J.	Lake City	Wadene, Wadene
Burns, M. A.	Milan	†Coddon, W. D.	St. Paul	Clearbrook
Burns, R. M.	St. Paul	†Cohen, B. A.	Minneapolis	Wadene, Wadene
Burton, C. G.	St. Paul	Cohen, S. S.	Oak Terrace	†Davis, T. C.
Buscher, J. C.	St. Cloud	Colberg, A. J.	Minneapolis	William, St. Paul
Bushard, W. J.	Minneapolis	Colby, W. L.	St. Paul	Day, Lois A.
Busher, H. H.	St. Paul	Cole, J. G.	Redwood Falls	Dearing, W. H., Jr.
Butler, J. K.	Carlton	Cole, W. H.	St. Paul	Edoer, Hermanus
†Butt, H. R.	Rochester	†Collie, H. G.	St. Paul	De Courcy, D. M.
Butturff, C. R.	Freeborn	Collins, A. N.	Duluth	Dedolph, Karl
†Butzler, J. A.	Mankato	†Collins, H. C.	Duluth	†Dedolph, T. H.
Buzzelle, L. K.	Minneapolis	Collins, J. S.	Wabasha	Delmore, J. L., Jr.
Cable, M. L.	Minneapolis	†Collie, E. A.	Robbinsdale	Roseau
†Cabot, C. M.	Minneapolis	Colvin, A. R.	St. Paul	del Plaine, C. W.
Cabot, V. S.	Minneapolis	Combacker, L. C.	Fergus Falls	Minneapolis
Cady, L. H.	Minneapolis	Comfort, M. W.	Rochester	†Derifield, R. S.
†Cain, C. L.	St. Paul	Condit, W. H.	Minneapolis	Desjardins, A. U.
Cairns, R. J.	Redwood Falls	†Condon, W. B.	Rochester	Detering, R. A., Jr.
†Caldwell, H. W.	Rochester	*Conlin, L. J.	North St. Paul	Devereaux, T. J.
Calhoun, F. W.	Albert Lea	†Conner, H. M.	Rochester	Dewey, D. H.
†Call, J. D.	Rochester	Connolly, C. J.	Rochester	Dickson, F. H., Jr.
Callahan, F. F.	Ah-Gwah-Ching	Connor, C. E.	St. Paul	Dickson, T. H.
Callerstrom, G. W.	Minneapolis	Cook, C. K.	Rochester	Diehl, H. S.
Calmenson, Marvin	Rochester	Cook, E. N.	St. Paul	Diessner, H. D.
Cameron, Isabell L.	Minneapolis	Cook, J. M.	Staples	Dittman, G. C.
Cameron, J. H.	Erskine	†Coombs, C. H.	Cass Lake	Duluth
†Cameron, J. M.	Rochester	*Cooney, H. C.	Princeton	Dittrich, R. J.
†Camp, J. D.	Rochester	†Cooper, C. C.	St. Paul	Dixon, C. F.
Camp, W. E.	Minneapolis	Cooper, M. D.	Winnebago	Dobyns, B. M.
†Campbell, C. M., Jr.	Rochester	†Cooper, Talbert	Rochester	Dockerty, M. B.
†Campbell, D. C.	Rochester	†Cooper, W. L.	Rochester	Dolder, F. C.
†Campbell, J. R.	Rochester	†Copsey, H. G.	Rochester	Doleman, N. F.
Campbell, L. M.	Minneapolis	Corbett, J. F.	Minneapolis	†Doman, V. W.
Campbell, O. J.	Minneapolis	†Corbitt, R. W.	Rochester	Doms, H. C. A.
†Canfield, W. W.	Houston	Cornea, A. D.	Minneapolis	Donaldson, C. S.
Cantwell, W. F.	International Falls	Correa, D. H.	Rochester	†Donoghue, F. E.
Cardle, A. E.	Minneapolis	†Corrigan, J. E.	Spooner	Donohue, P. F.
Cardle, G. E.	Brainerd	Cosgriff, J. A.	Olivia	Donovan, D. L.
Carey, J. B.	Minneapolis	Costin, M. E., Jr.	Rochester	Doolittle, L. E.
Carley, W. A.	St. Paul	Coulter, E. B.	Minneapolis	Dordal, John
		Counsellor, V. S.	Rochester	Sacred Heart
		Countryman, R. S.	St. Paul	Dornblaser, H. B.

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Dovre, C. M.	St. Paul	†Estrem, R. D.	Fergus Falls	Friend, A. W.	Minneapolis
†Dowidat, R. W.	Minneapolis	Estrem, T. A.	Hibbing	Freigh, W. P.	Albert Lea
†Downing, A. H.	Minneapolis	Eusterman, G. B.	Rochester	Fricke, R. E.	Rochester
Dowell, W. J.	Kerkhoven	†Evans, E. T.	Minneapolis	Friedell, George	Ivanhoe
Doxey, G. L.	Minneapolis	Evans, L. M.	Sauk Rapids	†Friedell, M. I.	Rochester
†Doyle, G. C.	Duluth	Evans, R. D.	Minneapolis	Friesleben, William	Sauk Rapids
Doyle, L. O.	Minneapolis	†Evarts, A. B.	Rochester	Frisch, F. P.	Willmar
Drake, C. B.	St. Paul	Evert, J. A., Jr.	Rochester	Fritzsche, Albert	New Ulm
Drake, C. R.	Minneapolis	Ewbank, J. N.	Lake Park	†Fritzsche, C. J.	New Ulm
†Drake, F. A.	Lanesboro	Ewens, H. B.	Virginia	Fritzsche, T. R.	New Ulm
†Drapiewski, J. F.	Rochester	†Ewing, C. F.	Wheaton	Fritz, W. L.	St. Paul
Dredge, H. P.	Sandstone	Eyres, T. E.	Pequot	†Fritzell, K. E.	Minneapolis
Drill, H. E.	Hopkins	Faber, J. E.	Rochester	Froats, C. W.	St. Paul
Drips, Della G.	Rochester	Faber, W. M.	Rochester	Frost, E. H.	Willmar
Drought, W. W.	Fergus Falls	†Fahlund, G. T. R.	Rochester	Frost, H. T.	Wadena
†Dry, T. J.	Rochester	†Fahey, E. W.	St. Paul	Frost, J. B.	Minneapolis
Dubbe, F. H.	New Ulm	Fahr, G. E.	Minneapolis	Fugina, G. R.	Mankato
Du Bois, J. F.	Sauk Centre	Fair, E. E.	Rochester	Fuller, Alice H.	Minneapolis
†Duff, E. R.	Minneapolis	†Fair, R. V.	Little Falls	†Funk, V. K.	Oak Terrace
Dukelow, D. A.	Minneapolis	Fankboner, A. V.	Duluth	Gaarde, F. W.	Rochester
†DuMais, A. F.	Rochester	Fansler, W. A.	Minneapolis	†Gaarde, F. W., Jr.	Rochester
†Dumas, A. G.	Minneapolis	Farrish, R. C.	Sherburn	*Gager, E. C.	St. Paul
Duncan, J. W.	Moorhead	†Farsh, I. J.	Minneapolis	Gaida, J. B.	St. Cloud
Dungay, N. S.	Northfield	Fawcett, A. M.	Renville	Gaines, E. C.	Buffalo Lake
†Dunlap, D. L.	Rochester	Fawcett, K. R.	Duluth	Gallagher, B. J.	Waseca
Dunlap, E. H.	Minneapolis	†Fawcett, R. M.	Rochester	Galligan, Margaret M. D.	Minneapolis
Dunn, G. R.	Minneapolis	Feeaney, J. M.	Minneapolis	†Galloway, J. B.	Minneapolis
Dunn, J. N.	St. Paul	Feinstein, J. Y.	Grove City	Gambill, E. E.	Rochester
Duryea, W. M.	Minneapolis	Feldman, F. M.	Rochester	Gamble, J. W.	Albert Lea
†Dutton, C. E.	Minneapolis	†Fellows, M. F.	Duluth	Gamble, P. M.	Albert Lea
Dvorak, B. A.	Minneapolis	Fenger, E. P. K.	Oak Terrace	Gammell, J. H.	Minneapolis
Dwan, P. F.	Minneapolis	Ferguson, F. F.	Rochester	Garbrecht, A. W.	St. Paul
†Dworasky, S. D.	St. Paul	Ferguson, J. C.	St. Paul	Gardiner, D. G.	St. Paul
†Dysterheft, A. F.	Minneapolis	Ferguson, W. C.	Walnut Grove	†Gardner, E. L.	Minneapolis
Earl, George	St. Paul	†Ferguson, W. J. Jr.	Rochester	Gardner, V. H.	Fairmont
†Earl, J. R.	St. Paul	†Ferguson, Wilson, J.	Rochester	Gardner, W. P.	St. Paul
Earl, Robert	St. Paul	Ferris, D. O.	Rochester	Garlock, D. H.	Bemidji
†East, John	Northome	Fessemairer, O. B.	New Ulm	†Garrow, D. M.	St. Paul
Eaton, L. M.	Rochester	Fesler, H. H.	St. Paul	Garten, J. L.	Minneapolis
Eaves, G. B.	Wabasso	†Fetterly, Warren	Minneapolis	Geer, E. K.	St. Paul
Eberlin, E. A.	Glenwood	†Feuling, J. C.	Bovey	Gehlen, J. N.	St. Paul
†Eckdale, J. E.	Lyle	†Field, A. H.	Farmington	Geist, G. A.	St. Paul
†Eckhardt, C. L.	Austin	Figu, F. A.	Rochester	Gendron, J. F. X.	Grand Rapids
Eckman, P. F.	Duluth	†Firk, D. L.	Minneapolis	Gentry, R. W.	Rochester
Eckmann, R. J.	Mahnomen	Fink, L. W.	Minneapolis	Gerber, M. P.	Brainerd
Ederer, J. J.	Duluth	Fink, W. H.	Minneapolis	Germo, Charles	Balaton
Edlund, Gustaf	St. Paul	Fischer, Albert	Rochester	Ghent, C. H.	St. Paul
†Edwards, J. W.	St. Paul	Fischer, M. McC.	Duluth	Ghormley, R. K.	Rochester
†Edwards, R. T.	Big Fork, Mont.	Fisher, I. I.	Ceylon	Ghostley, Mary C.	Puposky
Edwards, T. J.	St. Paul	Fisher, J. M.	Willmar	Gibbons, F. C.	Comfrey
†Egan, Sherman	Rochester	†Fisketti, Henry	Duluth	Gibbs, E. C.	St. Paul
†Eginton, C. T.	St. Paul	†Fitzgerald, D. F.	Minneapolis	Gibson, R. H.	Rochester
†Ehni, G. J.	Rochester	Fitzgerald, E. T.	Morris	†Giere, J. C.	Minneapolis
Ehrenberg, C. J.	Minneapolis	Fitzsimons, W. E.	Brainerd	Giere, R. W.	Minneapolis
†Ehrlich, S. P.	Minneapolis	Fjeldstad, C. A.	Minneapolis	†Gieren, S. W.	Benson
Eich, Matthew	Minneapolis	Flanagan, H. F.	St. Paul	†Giesen, A. F.	Starbuck
Eiler, John	Park Rapids	Flanagan, L. G.	Austin	†Gissler, P. W.	Minneapolis
Eisenstadt, D. H.	Minneapolis	Flasher, Jack	Rochester	Giffen, H. M.	Rochester
†Eisenstadt, W. S.	Minneapolis	Flashman, F. L.	Rochester	Giffen, H. Z.	Rochester
Eitel, G. D.	Minneapolis	Fleming, T. N.	St. Cloud	Giffen, Mary E.	Rochester
Ekblad, J. W.	Duluth	†Flesche, B. A.	Lake City	†Gifford, B. L.	Long Prairie
Elias, F. J.	Duluth	Flickinger, F. M.	Rochester	Gilbert, Harry	Minneapolis
Elkins, E. C.	Rochester	Flink, E. B.	Minneapolis	†Gilbert, M. G.	Minneapolis
Ellingson, A. R.	Detroit Lakes	Flinn, J. H.	Rochester	Gilbertson, Eva L.	Rochester
†Ellingson, E. A.	Rochester	Flinn, T. E.	Redwood Falls	†Gillilan, J. S.	St. Paul
Ellis, E. W.	Elgin	Floem, M. G.	Zumbrota	Gilkey, S. E.	St. Paul
Ellison, A. B. C.	Rochester	†Foerster, J. M.	Rochester	Gilles, F. L.	Minneapolis
Ellison, D. E.	Minneapolis	†Fogarty, C. W., Jr.	Rochester	†Gillespie, D. R.	Rochester
Ellison, F. E.	Monticello	Fogarty, C. W.	St. Paul	Gillespie, M. G.	Duluth
Elsey, E. M.	Glenwood	†Fogelberg, E. J.	St. Paul	†Gilman, L. C.	Atwater
Elsey, J. R.	Glenwood	Foker, L. W.	Minneapolis	†Gilmore, Rowland	Bemidji
Ely, O. S.	So. St. Paul	Foley, F. E. B.	St. Paul	Gingold, B. A.	Minneapolis
Emanuel, K. W.	Duluth	Folken, F. G.	Albert Lea	Ginsberg, William	St. Paul
Emerson, E. C.	St. Paul	Ford, B. C.	Duluth	Giroux, A. A.	North Mankato
†Emerson, G. F.	Rochester	Ford, W. H.	Marshall	Girvin, R. B.	Minneapolis
Emmerson, W. S.	Mayer	†Forney, R. A.	Minneapolis	Glaube, R. A.	Plainview
Emmett, J. L.	Rochester	Fortner, Lucille L.	Rochester	Glegg, D. L.	Rochester
Emond, A. J.	Farmington	Foshager, H. T.	Clara City	†Glotset, D. A.	Rochester
Endress, E. K.	St. Paul	Foss, E. L.	Rochester	Glover, R. P.	Cannon Falls
Engberg, E. J.	Faribault	†Foster, M. A.	Rochester	Goblitsch, A. P.	Sleepy Eye
Englehart, P. C.	Minneapolis	Foster, W. K.	Minneapolis	†Godwin, B. E.	Minneapolis
Englund, D. W.	Wadena	†Fowler, L. H.	Minneapolis	†Goehrs, G. H.	St. Cloud
Engstrand, O. J.	Minneapolis	Franchere, F. W.	Lake Crystal	Goehrs, H. W.	St. Cloud
Engstrom, G. F.	Belgrade	Francis, D. W.	Morristown	Golberg, M. L.	Minneapolis
†Engstrom, W. W.	Rochester	†Frane, D. B.	Minneapolis	†Goldberg, I. M.	Minneapolis
Enroth, O. E.	St. Paul	Frank, J. E.	Marshall	Golden, P. B.	Rochester
Eppard, R. M.	Cloquet	Frank, W. L. Jr.	Minneapolis	Goldish, D. R.	Duluth
Erich, J. B.	Rochester	Frear, Rosemary R.	Minneapolis	Goldman, T. I.	Minneapolis
†Erickson, A. O.	Ivanhoe	Fredericks, G. M.	Minneapolis	Goldner, M. Z.	Minneapolis
†Erickson, C. O.	Rochester	Frederickson, Alice C.	Willmar	Goltz, E. V.	St. Paul
†Erickson, D. J.	Rochester	Frederickson, G. U. Y.	Willmar	Good, C. A., Jr.	Rochester
Erickson, Eskil	Halstad	Fredlund, M. L.	Minneapolis	Good, H. D.	Minneapolis
Erickson, R. E.	Hector	Fredricks, M. G.	Duluth	Goodman, C. E.	Virginia
†Erickson, R. F.	Minneapolis	Freeman, C. D.	St. Paul	Gordon, N. F.	Rochester
†Ericson, R. M.	Minneapolis	Freeman, G. H.	St. Peter	Gordon, P. E.	Minneapolis
Ericson, Swan	Le Sueur	Freeman, J. G.	Rochester	★Gore, H. R.	Rochester
Ernest, G. C. H.	So. St. Paul	Freeman, J. P.	Albert Lea	†Gorsuch, M. T.	Rochester
Erskine, G. M.	Grand Rapids	Freeman, W. L.	St. Cloud	Goss, H. C.	Glencoe
Ertel, E. O.	Ellendale	Freeman, W. N.	Perham	Goss, Martha D.	Moorhead
†Eshby, E. C.	St. Paul	Fried, L. A.	Minneapolis	Gosslee, G. L.	Duluth
Esser, John	Perham			†Gowan, L. R.	Duluth

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Grabow, J. J.	Duluth	Hanson, H. V.	Minneapolis	Henry, M. R.	St. Peter
Graham, A. W.	Chisholm	Hanson, J. W.	Northfield	Hensel, C. N.	St. Paul
†Graham, F. M.	Rochester	Hanson, Lewis	Frost	Henslin, A. E.	Le Roy
Graham, R. B.	Rochester	Hanson, M. B.	Minneapolis	†Herbert, W. L.	Minneapolis
†Graham, R. J.	Rochester	†Hanson, N. O.	Rochester	Herbst, R. F.	Wykoff
Grahe, J. P.	Ely	Hanson, W. A. H.	Minneapolis	†Herman, Samuel	St. Paul
Grant, H. W.	St. Paul	Happe, L. J.	Minneapolis	Hermanson, P. E.	Hendricks
Gratzek, Thomas	Sauk Center	Hargraves, M. M.	Rochester	Heron, R. C.	St. Paul
†Grau, R. K.	St. Paul	†Harley, R. D.	Rochester	Herrell, W. E.	Rochester
Grave, Floyd	Minneapolis	†Harlowe, H. D.	Virginia	Herrmann, E. T.	St. Paul
†Graves, R. B.	Red Wing	†Harper, S. B.	St. Paul	Hertel, G. E.	Austin
†Graves, W. N.	Duluth	†Harri, E. J.	Rochester	†Hertz, M. J.	St. Paul
Gray, F. D.	Marshall	Harriman, Leonard	Carlton	Hertzog, A. J.	Minneapolis
†Gray, H. K.	Rochester	Harrington, C. D.	Howard Lake	Hewitt, Edith S.	Rochester
Gray, R. C.	Marshall	Harrington, F. E.	Wayzata	†Hewitt, R. M.	Rochester
†Gray, R. F.	Minneapolis	Harrington, S. W.	Minneapolis	†Heyerdale, O. C.	Rochester
*Greathouse, J. D.	Minneapolis	Hart, W. E.	Rochester	★Heyerdale, W. W.	Rochester
Green, R. G.	Minneapolis	Hartfiel, W. F.	Hibbing	Higgins, J. H.	Minneapolis
†Green, W. S.	Rochester	Hartig, Hermina A.	Worthington	†Higginson, J. F.	Rochester
Greene, L. F.	Rochester	Hartig, Marjorie	Hart	Higgs, W. W.	Park Rapids
Greenfield, W. T.	Delano	Hartman, H. R.	Rochester	Hilding, A. C.	Duluth
Griess, D. F.	Rochester	†Hartmann, C. M.	Fairfax	Hilger, A. W.	St. Paul
*Griffin, P. J.	Fertile	†Hartnagel, G. F.	Red Wing	Hilger, D. D.	St. Paul
†Grimes, B. P.	St. Peter	Hartung, E. H.	Clairemont	†Hilger, J. A.	St. Paul
Grimes, H. B.	Madelia	†Hartzell, T. B.	Minneapolis	Hilger, L. A.	St. Paul
Grimes, Marian	Minneapolis	†Harvey, George, Jr.	Rochester	Hilger, L. D.	St. Paul
†Grindlay, J. H.	Rochester	Haskell, A. D.	Alexandria	†Hill, Eleanor J.	Minneapolis
Grise, W. B.	Austin	Hassett, M. F.	St. Paul	Hill, F. E.	Duluth
Grogan, J. S.	Wadena	Hassett, R. G.	Mankato	†Hill, J. R.	Rochester
†Gronvall, P. R.	Minneapolis	Hastings, D. R.	Minneapolis	†Hillis, S. J.	Minneapolis
Groschupf, T. P. E.	Bemidji	Hatch, W. E.	Duluth	†Hinchey, J. I.	Rochester
Grose, F. N.	Clarissa	†Hathaway, S. J.	Proctor	Hinckley, R. G.	Minneapolis
Gruenhagen, A. P.	St. Paul	Hauge, E. T.	Minneapolis	Hines, E. A., Jr.	Rochester
Grundset, O. J.	Montrose	Hauge, M. I.	Clarkfield	Hiniker, L. P.	St. Paul
Guerin, B. B.	Rochester	†Haugen, J. A.	Minneapolis	Hinshaw, H. C.	Le Sueur
†Guernsey, D. E.	Rochester	Haunz, E. A.	Rochester	Hirschboeck, F. J.	Duluth
†Guilfoile, P. J.	Delano	Hauser, V. P.	St. Paul	Hirschfeld, F. R.	Minneapolis
Guldseth, G. J.	Duluth	Havel, H. W.	Jordan	Hitchings, W. S.	Lakefield
Gullixson, Andrew	Albert Lea	†Havel, T. E.	Blue Earth	†Hoagland, P. L. Jr.	Rochester
Gully, R. J.	Cambridge	Haven, W. K.	Minneapolis	†Hoaglund, A. W.	Los Angeles, Calif.
Gunderson, N. A.	Minneapolis	Havens, F. Z.	Rochester	†Hobbs, C. A.	Minneapolis
Gushurst, E. G.	Minneapolis	Havens, J. G. W.	Austin	Hochfilzer, J. J.	St. Paul
†Gustason, H. T.	Minneapolis	Hawkins, W. J.	Rochester	Hodapp, R. J.	Willmar
Haavik, J. E.	St. Paul	*Hawkinson, J. P.	Crosby	Hodge, S. V.	Minneapolis
Habein, H. C.	Rochester	†Hawkinson, R. P.	Minneapolis	Hodgson, C. H.	Rochester
haberman, Emil	Osakis	Hayes, J. M.	Minneapolis	Hodgson, Jane E.	Rochester
†Hackie, E. A.	Hallock	Hayes, M. F.	Nashwaik	Hodgson, J. R.	Rochester
*Hacking, F. H.	Minneapolis	†Hays, A. T.	Minneapolis	Hooper, P. G.	Mankato
†Haes, J. E.	Vernon Center	†Head, D. P.	Minneapolis	Hoff, Alfred	St. Paul
Hagedorn, A. B.	Rochester	Head, G. D.	Minneapolis	Hoff, H. O.	Duluth
Hagen, O. E.	Butterfield	Healy, R. T.	Pierz	Hoffbauer, F. W.	Minneapolis
Hagen, O. J.	Moorhead	†Hebbel, Robert	Minneapolis	Hoffert, H. E.	Minneapolis
†Hagen, W. S.	Minneapolis	Hebeisen, M. B.	Chaska	*Hoffman, M. H.	St. Paul
†Haggard, G. D.	Minneapolis	Heck, F. J.	Rochester	Hoffman, R. A.	Minneapolis
Haight, G. G.	Audubon	Heck, W. W.	St. Paul	Hoffman, W. L.	Minneapolis
Haines, J. H.	Stillwater	Hedack, A. E.	Minneapolis	Hoidal, A. D.	Tracy
†Haines, R. D.	Rochester	Hedberg, G. A.	Nopeming	Holcomb, J. T.	Marine-on-St. Croix
Haines, S. F.	Rochester	Hedemark, H. H.	Thief River Falls	Holcomb, O. W.	St. Paul
†Haisten, A. S.	Rochester	Hedenstrom, F. G.	St. Paul	†Holl, P. M.	Minneapolis
Halenbeck, P. L.	St. Cloud	Hedenstrom, L. H.	Cambridge	Hollands, W. H.	Fisher
Hall, A. R.	St. Paul	Hedin, R. F.	Red Wing	Holm, H. H.	Glencoe
Hall, B. E.	Rochester	Heersema, P. H.	Rochester	†Holm, P. F.	Wells
Hall, H. B.	Minneapolis	Heijman, Dorothy M. H.	Rochester	†Holmberg, C. J.	Minneapolis
Hall, H. H.	St. Paul	Heijman, F. R.	Rochester	Holmberg, L. J.	Canby
Hall, J. M.	Minneapolis	Heim, D. J.	Rochester	Holmen, R. W.	St. Paul
Halladay, G. J.	Brainerd	Heim, R. R.	Minneapolis	Holmes, A. E.	Rush City
Hallberg, C. A.	Minneapolis	Heimark, J. J.	Fairmont	Holmes, C. L.	Rochester
Hallberg, O. E.	Rochester	Heiherg, F. A.	Rochester	Holmstrom, C. H.	Warren
Hallenbeck, D. F.	Rochester	Heiherg, O. M.	Worthington	†Holt, G. W.	Wabasha
†Hallenberg, G. A.	Rochester	Heilman, Dorothy M. H.	Rochester	Holt, J. E.	St. Paul
Hallendorf, Leonard	Rochester	Heilman, F. R.	Rochester	*Holt, W. B.	Minneapolis
*Haller, W. M.	Bemidji	Heim, D. J.	Rochester	Holtan, Theodore	Waterville
Hallinan, R. P.	Worthington	Heim, R. R.	Minneapolis	†Holzapfel, F. C.	Minneapolis
Halloran, W. H.	Minneapolis	Heimark, J. J.	Fairmont	†Honke, R. W.	Proctor
Halpern, D. J.	Jackson	†Heinrich, W. A.	Rochester	†Hopkins, G. W.	St. Paul
Halpin, J. E.	Rush City	†Heinz, Ivy B.	Hastings	†Hopping, R. A.	Rochester
Hamel, A. L.	Minneapolis	†Heinz, L. H.	Hastings	Horan, M. J., Jr.	Rochester
Hamlin, G. B.	Minneapolis	Heise, Herbert	Winona	Horton, B. T.	Rochester
†Hamlon, J. S.	St. Charles	Heise, Paul	Winona	†Horwitz, S. E.	Minneapolis
Hamm, R. S.	Rochester	Heise, W. F. C.	Winona	†Hottinger, R. C.	Janesville
Hammar, L. M.	Two Harbors	Heise, W. V.	Winona	Houkom, Bjarne	Minneapolis
Hammermeister, T. F.	New Ulm	†Helferty, J. K.	Tracy	Houkom, S. S.	Duluth
†Hammerstad, L. M.	Minneapolis	Helland, G. M.	Spring Grove	House, Z. E.	Cass Lake
Hammes, E. M.	St. Paul	Helland, J. W.	Spring Grove	†Houston, D. M.	Park Rapids
†Hammes, E. M., Jr.	Rochester	Helmholz, H. F.	Rochester	Howde, Rolf	Winthrop
Hammond, A. J. H.	Minneapolis	Helselt, H. K.	Thief River Falls	Hovland, M. L.	Minneapolis
Hammond, J. F.	St. Paul	Hempstead, B. E.	Rochester	Howard, M. A.	St. Paul
†Hampton, H. P.	Rochester	†Hemstead, Werner	Fergus Falls	Howard, M. I.	Mankato
Haney, C. L.	Duluth	Hench, P. S.	Rochester	Howard, W. S.	St. Paul
†Hankerson, R. G.	Minnesota Lake	Henderson, A. J. G.	No. St. Paul	Howell, L. P.	Rochester
†Hanlon, G. H.	Rochester	Henderson, I. W.	Rochester	Howg, E. M.	Barrett
Hannah, H. B.	Minneapolis	†Henderson, L. L.	Rochester	†Hoyer, L. J.	Windom
Hanover, R. D.	Littlefork	Henderson, M. S.	Rochester	Hoyer, L. P., Jr.	Rochester
Hansen, C. O.	Minneapolis	Hendrickson, J. F.	Minneapolis	Hoyn, R. M.	Rochester
Hansen, E. W.	Minneapolis	Hendrickson, R. R.	Lake Park	Hubbard, O. E.	Brainerd
Hansen, Olga S.	Minneapolis	Hengstler, W. H.	St. Paul	Hubin, E. G.	Deerwood
Hanson, A. M.	Faribault	Henney, W. H.	McIntosh	Hudec, E. R.	Echo
Hanson, E. O.	Cloquet	Henrikson, E. C.	Minneapolis	Hudson, G. E.	Minneapolis
Hanson, E. C.	New York Mills	†Henry, C. E.	Kirksville, Mo.	Huenekens, E. J.	Minneapolis
Hanson, H. B.	St. Paul	Henry, C. J.	Milaca	Huffington, H. L.	Mankato
Hanson, H. J.	Minneapolis	Henry, M. O.	Minneapolis	†Hughes, T. J.	Rochester

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Hultkrans, R. E.	Minneapolis	Jordan, L. S.	Granite Falls	Koenigsberger, Charles	Mankato
Humphrey, E. W.	Moorhead	Josewicz, Alexander	Minneapolis	†Koepcke, G. M.	Minneapolis
Humphrey, W. R.	Stillwater	Josewski, R. J.	Stillwater	†Koepsell, A. A. H.	St. Paul
Hunt, A. B.	Rochester	†Joss, C. S.	Rochester	Kohlby, C. O.	Duluth
Hunt, R. C.	Fairmont	†Joyce, G. L.	Rochester	Kohler, D. W.	St. Joseph
†Hunt, R. S.	Fairmont	Judd, D. B.	Rochester	Kolars, J. J.	Faribault
†Hunter, O. B., Jr.	Rochester	†Judd, E. S. Jr.	Rochester	Koller, H. M.	Minneapolis
Hurd, Annah	Minneapolis	Judd, W. H.	Minneapolis	Koller, L. R.	Minneapolis
†Hurley, J. P.	Rochester	Juergens, H. M.	Belle Plaine	Koop, S. H.	Richmond
*Hursch, M. M.	Hibbing	†Juers, E. H.	Red Wing	Korchik, J. P.	Minneapolis
Hurwitz, M. M.	St. Paul	†Jump, W. C.	Kasson	Kortsch, F. P.	Prior Lake
Hutchins, S. P.	Rochester	Jurdy, M. J.	Minneapolis	†Koskela, L. E.	Sebeka
†Hutchinson, C. J.	Minneapolis	Just, H. J.	Hastings	Kostick, W. R.	Fertile
Hutchinson, Dorothy W.	Oak Terrace	Kaasa, L. J.	Albert Lea	Kotchevar, F. R.	Eveleth
Hutchinson, Henry	Hastings	†Kabler, P. W.	Minneapolis	Koucky, R. W.	Minneapolis
Hutchinson, J. C.	Rochester	Kabrick, O. A.	Jackson	†Kozberg, Oscar	Moose Lake
Huxley, F. R.	Faribault	Kadish, A. H.	Rochester	*Kraft, Peter	Duluth
Hymes, Charles	Minneapolis	Kalin, O. T.	Minneapolis	Kratzer, G. L.	Rochester
Hynes, J. E.	Minneapolis	Kalinoff, Demeter	Stillwater	†Krause, C. W.	Fairmont
Iams, A. M.	Rochester	†Kallestad, L. L.	Hutchinson	†Kreilkamp, B. L.	Rochester
Ide, A. W.	St. Paul	Kamman, G. R.	St. Paul	Kreuzer, T. C.	Marshall
†Idstrom, L. G.	Minneapolis	Kamp, B. A.	Albert Lea	†Krieser, A. E.	Boyd
Ikeda, Kano	St. Paul	†Capernick, J. S.	Rochester	Krueger, V. R.	Nopeming
†Ingebrigtsen, E. K. G.	Moorhead	†Kaplan, D. H.	St. Paul	Krusen, F. H.	Rochester
Ingerson, C. A.	St. Paul	Kaplan, J. J.	Rochester	Kucera, F. J.	Hopkins
Irvine, H. G.	Minneapolis	†Karleen, C. I.	Tracy	†Kucera, L. J.	Lonsdale
†Iverson, H. A.	Rochester	Karlstrom, A. E.	Minneapolis	Kucera, S. T.	Lonsdale
†Ivie, J. McK.	Rochester	Karn, B. R.	Ortonville	Kucera, W. J.	Minneapolis
Jackman, R. J.	Rochester	†Karon, J. F.	St. Paul	Kugler, A. A.	St. Paul
†Jackson, C. M.	Minneapolis	Karon, J. M.	St. Paul	Kurtin, H. J.	Blooming Prairie
†Jackson, H. S.	Rochester	Kasper, E. M.	St. Paul	Kurzweg, F. T.	Rochester
†Jacobs, D. L.	Willmar	Kath, R. H.	Woodlake	Kuske, A. W.	St. Paul
Jacobs, G. C.	Fergus Falls	†Katzovitz, Hyman	St. Paul	Kusske, A. L.	New Ulm
Jacobs, J. C.	Willmar	Kaufman, E. J.	Appleton	Kvale, W. F.	Rochester
Jacobson, Clarence	Chisholm	Kaufman, W. B.	Mankato	Kvitrud, Gilbert	St. Paul
Jacobson, C. W.	Breckenridge	Kaufman, W. C.	Appleton	†La Bree, R. H.	Duluth
Jaeck, J. L.	Minneapolis	†Kauvar, A. J.	Rochester	Laikola, L. A.	Soudan
Jamieson, E. F.	Brainerd	†Kearney, R. W.	Mankato	Laird, A. T.	Duluth
Janecky, A. G.	Munroe, Ia.	Keating, F. R., Jr.	Rochester	Lajoie, J. M.	Minneapolis
†Janssen, M. E.	St. Paul	Keefe, R. E.	St. Paul	Lake, C. F.	Rochester
Jarboe, J. P.	Rochester	Keith, H. M.	Rochester	Lander, H. H.	Rochester
Jensen, A. M.	Brownout	Keith, N. M.	Rochester	Lang, L. A.	Minneapolis
Jensen, H. C.	Minneapolis	Keithahn, E. E.	Sleepy Eye	†Langenderfer, F. V.	St. Paul
Jensen, M. J.	Minneapolis	Kelby, G. M.	Sleepy Eye	Langhoff, A. H.	St. Peter
Jensen, R. A.	Minneapolis	†Kelly, A. C.	Duluth	Lannin, J. C.	Mabel
Jensen, T. J.	Duluth	Kelly, J. V.	St. Paul	Lapierre, A. P.	Minneapolis
Jeston, J. W.	St. Paul	Kelly, P. H.	St. Paul	Lapierre, J. T.	Minneapolis
†Jessico, C. M.	Duluth	Kelsey, C. G.	St. Paul	†Large, H. R.	Rochester
†Johanson, W. G.	St. Paul	Kelsey, C. M.	St. Paul	†Larrabee, W. F., Jr.	Rochester
Johnson, A. B.	Minneapolis	Kemp, A. F.	Mankato	Larsen, C. L.	St. Paul
Johnson, A. E.	Red Wing	Kemp, M. W.	Moose Lake	†Larsen, F. W.	Minneapolis
Johnson, A. E.	Minneapolis	†Kemper, C. M.	Rochester	Larson, Arnold	Detroit Lakes
Johnson, A. M.	St. Paul	†Kenefick, E. V.	St. Paul	Larson, C. M.	Minneapolis
Johnson, C. E.	Pine River	†Kennedy, C. C.	Minneapolis	Larson, Eva-Jane	St. Paul
Johnson, C. E.	St. Paul	Kennedy, Jane F.	Minneapolis	Larson, K. D.	Rochester
Johnson, C. R.	Rochester	Kennedy, R. L. J.	Rochester	Larson, L. J.	Bagley
Johnson, C. M.	Dawson	†Kennedy, T. J.	Rochester	†Larson, L. M.	Minneapolis
Johnson, D. L.	Little Falls	Kennedy, W. A.	St. Paul	†Larson, M. H.	Oak Terrace
Johnson, D. W.	Fairmont	†Kenyon, T. J.	St. Paul	Larson, P. N.	Nicollet
Johnson, E. W.	Bemidji	Kepler, E. J.	Rochester	Larson, R. A.	Minneapolis
Johnson, E. W.	Minneapolis	Kerkhof, A. C.	Minneapolis	†Latchem, C. W.	Rochester
Johnson, Evelyn V.	St. Louis Park	†Kern, C. E.	Rochester	†Lauer, D. J.	St. Paul
Johnson, H. A.	Minneapolis	†Kern, M. C.	Freeport	Laughlin, J. T.	Grey Eagle
Johnson, H. C.	North Mankato	Kernohan, J. W.	Rochester	La Vake, R. T.	Minneapolis
Johnson, H. C.	Thief River Falls	Kertesz, Geza	Minneapolis	Lax, M. H.	St. Paul
Johnson, H. E.	Bird Island	Kesting, Herman	St. Paul	Laymon, C. W.	Minneapolis
Johnson, H. P.	Rochester	†Kettlewell, R. B.	Sauk Center	Lazar, H. L.	Minneapolis
Johnson, Hans	Kerkhoven	Keyes, J. D.	Winona	Leahy, Bartholomew	St. Paul
Johnson, J. A.	St. Paul	Kierland, P. E.	Alexandria	†Leary, W. V.	Rochester
Johnson, J. A.	Minneapolis	†Kierland, R. R.	Rochester	Leavenworth, R. O.	St. Paul
Johnson, J. R.	Rochester	Kiernan, P. C.	Rochester	†Leavitt, H. H.	Minneapolis
Johnson, Julius	Minneapolis	Kiesling, I. H.	Coldwater	Lebowe, J. A.	Minneapolis
Johnson, J. W.	Kerkhoven	Kilbride, E. A.	Worthington	†Leck, P. C.	Austin
Johnson, K. E.	Duluth	Kilbride, J. S.	Canby	Leddy, E. T.	Rochester
Johnson, M. R.	Red Wing	Kimmel, G. C., Jr.	Red Wing	Lee, H. M.	Minneapolis
Johnson, N. A.	Santa Monica, Calif.	King, E. A.	Minneapolis	Lee, H. W.	Brainerd
Johnson, N. P.	Minneapolis	King, Frances W.	Oak Terrace	Lee, J. L.	Alexandria
Johnson, N. T.	Minneapolis	Kingsbury, E. M.	Moose Lake	Lee, W. N.	Madison
Johnson, O. H.	Redwood Falls	Kinsella, T. J.	Minneapolis	Leenhuus, G. H.	Aitkin
Johnson, O. V.	Fergus Falls	Kirk, G. P.	East Grand Forks	Leggett, Elizabeth A.	Ah-Gwah-Ching
Johnson, Olga H.	Moorhead	†Kirkland, W. G.	Rochester	†Lehnhoff, H. J., Jr.	Rochester
Johnson, P. C.	Tyler	Kirklin, B. R.	Rochester	Leibold, H. H.	Parkers Prairie
Johnson, R. A.	Minneapolis	Kirklin, O. L.	Rochester	Leick, R. M.	St. Paul
Johnson, Raymond A.	Minneapolis	Kistler, A. J.	Minneapolis	†Leighton, Robert	Evansville
Johnson, R. B.	Lanesboro	†Kistler, C. M.	Minneapolis	Leitch, Archibald	St. Paul
Johnson, R. E.	Minneapolis	Kleifgen, G. V.	Rochester	Leland, H. R.	Warroad
Johnson, R. F.	Crookston	Klein, Harry	Duluth	†Leland, J. A. C., Jr.	Minneapolis
Johnson, R. G.	Stillwater	Klein, H. N.	St. Paul	Lemon, W. E.	Rochester
Johnson, R. H.	Rochester	†Klein, J. C.	Shakopee	Lenander, M. E.	St. Peter
Johnson, V. M.	Dawson	Klima, W. W.	Stewart	Lende, Norman	Browerville
Johnson, W. E.	Morgan	†Klinkenberg, R. B.	Rochester	Knapp, F. N.	Glencoe
Johnson, Y. T.	Minneapolis	†Klontz, C. E., Jr.	Rochester	Knapp, M. E.	Virginia
Johnsrud, L. W.	Hibbing	Kloos, E. K.	Rochester	Knauff, M. K.	Minneapolis
Johnston, L. F.	Winona	Knapp, G. A.	Duluth	Knight, E. G.	Morton
Jolin, F. M.	Bovey	Knapp, G. A.	St. Paul	Knight, R. R.	Minneapolis
Jolin, R. V.	Grand Rapids	Knapp, G. A.	Swanville	Knight, R. T.	Minneapolis
Jones, A. W.	Red Wing	Knights, J. A.	Bemidji	Knapp, G. A.	Albert Lea
Jones, E. M.	St. Paul	Knudson, G. A.	Greenbush	Lepak, F. J.	Duluth
Jones, H. W., Jr.	Minneapolis	Knudson, G. E.	St. Paul	Lepak, J. A.	St. Paul
Jones, O. H.	Madison Lake	Knudson, J. R. B.	Rochester	†Lerche, William	Cable, Wis.
Jones, R. N.	St. Cloud	Koelsche, G. A.	Rochester	Leven, N. L.	St. Paul
Jones, W. R.	Minneapolis			†Leverenz, C. W.	St. Paul
Jordan, Kathleen	Granite Falls				

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Levin, B. G.	St. Paul	Mach, F. B.	Minneapolis	†McKenzie, C. H.	Minneapolis
†Levin, Louis	Rochester	†Mack, J. J.	Chicago, Ill.	McKeon, J. O.	Montgomery
Levinson, J. P.	Rochester	†MacKay, H. J.	Seattle, Wash.	†McKibbin, J. P.	Rochester
Levitt, G. X.	St. Paul	†MacKinnon, D. C.	Minneapolis	McKinlay, C. A.	Minneapolis
Levy, M. S.	Rochester	†MacLain, W. E., Jr.	Litchfield	McKinley, J. C.	Minneapolis
Henning		†MacLean, A. R.	Rochester	McKinley, F. S.	Minneapolis
Lewis, A. J.	St. Cloud	†MacMillan, D. G.	Triumph	*McLane, Evelyn G.	Cambridge
Lewis, C. B.	Lonsdale	Macnie, J. S. S.	Minneapolis	†McLaren, Jennette M.	Minneapolis
Lexa, F. J.	St. Cloud	†MacRae, G. C.	Duluth	McLaughlin, E. M.	Winona
Libert, J. N.	Rochester	Madden, J. F.	St. Paul	McLeod, J. L.	Grand Rapids
Lichtman, A. L.	St. Paul	†Madland, R. S.	Fairfax	★McMahon, L. H.	Breckenridge
Lick, C. L.	Mankato	Maeder, E. C.	Minneapolis	McMahon, M. J.	Green Isle
Liedloff, A. G.	Rochester	Maertz, W. F.	St. Paul	McNeary, D. J.	Rochester
†Lien, R. J.	Red Wing	†Magath, T. B.	Rochester	McNutt, J. R.	Duluth
Liffrig, W. W.	St. Paul	Magney, F. H.	Duluth	McPheeters, H. O.	Minneapolis
Lightbourn, E. L.	St. Paul	Magnusen, A. E.	Wheaton	†McQuarrie, Irvine	Minneapolis
Lilleberg, N. J.	Robbinsdale	Magraw, R. M.	Two Harbors	McVicker, J. H.	Rochester
Lillehei, E. J.	Rochester	Mahle, D. G.	Plainview	†Mead, C. H.	Duluth
Lillie, H. I.	Rochester	Mahowald, Aloys.	Albany	Meade, J. R.	St. Paul
†Lillie, J. C.	Montevideo	*Maitland, D. P.	Jackson	†Mears, B. J.	St. Paul
Lima, L. R.	Montevideo	Maitland, E. T.	Jackson	Mears, R. F.	Northfield
Lima, L. R., Jr.		Maland, C. O.	Minneapolis	†Medelman, J. P.	St. Paul
Lind, C. J.	Minneapolis	Malerich, J. A.	St. Paul	Meinert, A. E.	Winona
†Lind, C. J., Jr.	Minneapolis	Malmstrom, J. A.	Virginia	*Meland, E. L.	Minneapolis
†Lindahl, W. W.	Rochester	Manley, J. R.	Duluth	Melby, Benedict.	Blooming Prairie
Lindberg, A. C.	Minneapolis	Manlove, F. R.	Rochester	Mellby, O. F.	Thief River Falls
Lindberg, A. L.	Wheaton	†Mann, F. C.	Rochester	Meller, R. L.	Minneapolis
†Lindberg, V. L.	Minneapolis	†Manning, J. J.	Rochester	Melson, T. J.	Rochester
Linde, Herman.	Cyrus	†Manson, F. M.	Worthington	Melzer, G. R.	Lyle
†Lindgren, R. C.	Minneapolis	†Marclay, W. J.	Minneapolis	Mercil, W. F.	Crookston
Lindley, S. B.	Willmar	Mariette, E. S.	Oak Terrace	Merkert, C. E.	Minneapolis
Lindquist, R. H.	Minneapolis	†Margulies, Harold	Rochester	Merkert, G. L.	Minneapolis
Linner, H. P.	Minneapolis	Mark, D. B.	Minneapolis	†Merrill, Elisabeth	Minneapolis
Lippman, E. S.	Minneapolis	†Mark, Hilbert	Minneapolis	†Merrill, Robert.	Morris
Lippman, H. S.	St. Paul	Marking, G. H.	Minneapolis	Merriman, L. L.	Duluth
Lippmann, E. W.	Hutchinson	†Marks, R. W.	St. Paul	Merritt, W. A.	Rochester
†Lipschultz, Oscar	Minneapolis	†Marr, G. E.	Rochester	†Mesker, G. H.	Olivia
Lipscomb, P. R.	Rochester	★Marsh, O. M.	Litchfield	†Messler, J. D.	Rochester
Litchfield, J. T.	Minneapolis	Martens, T. G.	Rochester	Metcalfe, R. M.	Rochester
†Litman, A. B.	Minneapolis	Martin, D. L.	Rochester	Meyer, A. A.	Melrose
Litman, S. N.	Duluth	Martin, T. P.	Arlington	Meyer, A. J.	Minneapolis
†Little, A. G., Jr.	Rochester	†Martin, W. C.	Duluth	Meyer, E. L.	Minneapolis
Little, W. J.	St. Paul	Martineau, J. L.	St. Paul	Meyer, F. C.	Kenyon
Litzenberg, J. C.	Minneapolis	Martinson, C. J.	Wayzata	†Meyer, J. O.	Grand Rapids
Lobitz, W. C., Jr.	Rochester	†Marvin, C. P.	Rochester	Meyer, P. F.	Faribault
†Lothead, D. C.	Rochester	†Mason, J. A.	International Falls	†Meyer, W. M.	Winona
†Lofgren, K. A.	Rochester	Masson, D. M.	Rochester	Meyerding, E. A.	St. Paul
Lofness, S. V.	Minneapolis	Masson, J. C.	Rochester	Meyerding, H. W.	Rochester
Logan, A. H.	Rochester	†Matchan, G. R.	Minneapolis	†Meyers, W. C.	Rochester
Logan, G. B.	Rochester	Matthews, Justus	Minneapolis	Michael, J. C.	Minneapolis
Logefeil, R. C.	Minneapolis	†Mattill, P. M.	Oak Terrace	†Michel, H. H.	Minneapolis
Lohmann, J. G.	Pipestone	†Mattison, P. A.	Winona	Michelson, H. E.	Minneapolis
Loken, S. M.	St. Paul	†Mattison, R. E.	Minneapolis	Mickelson, J. C.	Mankato
Loken, Theodore.	Ada	†Mattson, A. D.	Milaca	Millen, F. J.	Rochester
Lommen, P. A.	Austin	★Mattson, C. H.	St. Paul	Miller, E. W.	Anoka
Long, G. C.	Rochester	†Mattson, H. A. N.	Minneapolis	†Miller, Harold E.	Minneapolis
†Long, Jesse.	Minneapolis	Maxeiner, S. R.	Minneapolis	Miller, Hugo E.	Minneapolis
Long, Mary.	Rochester	†Mattison, P. A.	Minneapolis	Miller, J. C.	Minneapolis
Long, R. C.	Rochester	†Mazzoni, R. E.	Minneapolis	Miller, J. R., Jr.	Rochester
Loofbourrow, E. H.	Keewatin	†Maynard, M. S.	Rochester	†Miller, R. C.	Rochester
Loomis, E. A.	Minneapolis	†Mayne, R. M.	Duluth	Miller, Sidney.	Rochester
Loomis, G. L.	Winona	†Mayo, C. W.	Rochester	Miller, V. T.	Mankato
Love, F. A.	Carlos	†Maytum, C. K.	Rochester	Miller, W. A.	New York Mills
Love, J. G.	Rochester	McAnally, A. K.	Rochester	Mills, J. L.	Winnebago
†Lovelace, W. R.	Rochester	McBroom, D. E.	Redfield, S. D.	Milton, J. S.	Minneapolis
†Lovelady, S. B.	Rochester	†McCaffrey, F. J.	Minneapolis	Miners, G. A.	Deer River
†Lovering, Joseph	Rochester	McCain, D. L.	St. Paul	†Minge, R. K.	Clarkfield
Lovett, Beatrice R.	Oak Terrace	†McCall, C. H.	Rochester	†Mingo, F. E.	Hugo
†Lovshin, L. L.	Rochester	McCann, D. F.	Bemidji	†Minkler, J. E.	Virginia
Love, E. R.	So, St. Paul	McCarten, F. M.	Stillwater	Minsky, A. A.	Minneapolis
Lowe, T. A.	So, St. Paul	†McCarthy, Donald.	Minneapolis	Minty, Earl W.	Duluth
Lowry, Elizabeth C.	Minneapolis	McCarthy, H. H.	Rochester	Mitby, I. L.	Aitkin
Lowry, Thomas.	Minneapolis	McCarthy, J. J.	St. Paul	Mitchell, E. C.	Minneapolis
Luck, Hilda.	Mankato	McCarthy, W. J.	Madelia	Moberg, C. W.	Detroit Lakes
Luckemeyer, C. J.	St. Cloud	McCarthy, W. R.	St. Paul	Moe, A. E.	Rochester
†Luckey, C. A.	Rochester	McCartney, J. S.	Minneapolis	Moe, J. H.	Minneapolis
†Lueck, A. G.	Rochester	McCarty, P. D.	Ely	Moe, R. J.	Duluth
Lufkin, C. D.	Northfield	McClanahan, J. H.	White Bear Lake	Moe, Thomas.	Moose Lake
†Lufkin, N. H.	Minneapolis	McClanahan, T. S.	White Bear Lake	Moen, J. K., Jr.	Minneapolis
Lund, C. J.	Minneapolis	†McClellan, G. T.	Rochester	Moersch, F. P.	Rochester
Lund, C. J. T.	Fergus Falls	†McCloud, C. N., Jr.	Rochester	Moersch, H. J.	Rochester
Lund, W. J.	Staples	†McCoy, Mary K.	Duluth	Moga, J. A.	St. Paul
Lundberg, Ruth I.	Minneapolis	†McCrannon, H. P.	Minneapolis	†Moir, W. W.	Stillwater
Lundblad, R. A.	Minneapolis	McDaniel, Orianna.	Minneapolis	Molander, H. A.	St. Paul
†Lundblad, S. W.	Minneapolis	McDonald, A. L.	Duluth	†Mollers, T. P.	Mountain Iron
Lundgren, A. C.	Minneapolis	McDonald, J. R.	Rochester	Monahan, Elizabeth S.	Minneapolis
Lundholm, A. M.	St. Paul	McDowell, J. P.	St. Cloud	Monohan, R. H.	International Falls
†Lundquist, C. W.	Winona	†McEachern, C. G.	Rochester	Monroe, P. B.	Cloquet
Lundquist, E. F.	Minneapolis	†McEliggott, E. W.	Breckenridge	†Monserud, N. O.	Cloquet
Lundy, J. S.	Rochester	McEnaney, C. T.	Owatonna	†Monson, E. N.	Minneapolis
Lyght, C. E.	New York, N. Y.	McEwan, Alexander.	St. Paul	†Monson, L. J.	Canby
Lynch, F. W.	St. Paul	McFarland, A. H.	Minneapolis	Montgomery, Hamilton.	Rochester
Lynch, J. L.	Rochester	McGandy, R. F.	Minneapolis	Mooney, L. P.	Graceville
Lynch, M. J.	Minneapolis	McGeary, G. E.	Minneapolis	†Moos, D. J.	Minneapolis
†Lynch, R. C.	Rochester	McGroarty, J. J.	Easton	Moquin, Marie A.	St. Paul
Lynde, O. G.	Thief River Falls	McGughan, H. T.	Red Wing	More, C. W.	Eveleth
Lysne, Henry.	Minneapolis	McHaffie, O. L.	Duluth	Morehead, D. E.	Owatonna
†Lysne, Myron	Minneapolis	McInerny, M. W.	Minneapolis	Moren, Edward.	Minneapolis
Macbeth, J. L.	St. Clair	McIntire, H. M.	Waseca	†Moren, L. A.	St. Paul
†MacCarty, C. S.	Rochester	McIntyre, J. A.	Owatonna	Morgan, H. O.	Amboy
MacCarty, W. C.	Rochester	McIver, B. A.	Lowry	Moariety, Berenice.	St. Paul
MacDonald, A. E.	Minneapolis	McKaig, C. B.	Pine Island	Moariety, Cecile R.	St. Paul
MacDonald, D. A.	Minneapolis	McKelvey, J. L.	Minneapolis	Mork, A. H.	Anoka
MacFay, H. B.	Rochester	McKenna, J. K.	Austin	Mork, B. O., Jr.	Worthington
Macfarlane, P. H.	Chisholm	McKenna, M. J.	Grand Rapids	Mork, B. O., Sr.	Worthington

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†Mork, F. E.	Anoka	NydaHL, M. J.	St. Paul	Pennie, D. F.	Duluth
Morley, G. A.	Crookston	Nye, Katherine A.	St. Paul	†Pennington, R. E.	Rochester
Morlock, C. G.	Rochester	Nye, Lillian L.	St. Paul	Peppard, T. A.	Minneapolis
Morrison, A. W.	Minneapolis	Nygren, W. T.	Braham	†Perkins, R. F.	Rochester
Morrison, Charlotte J.	Minneapolis	Nylander, E. G.	Minneapolis	†Perlman, E. C.	Minneapolis
Morse, M. P.	Le Roy	Nystrom, Ruth G.	Minneapolis	Perry, C. G.	St. Paul
Morse, R. W.	Minneapolis	Oberg, C. M.	Minneapolis	†Perry, T. T.	Rochester
Morsman, L. W.	Hibbing	†O'Brien, W. A.	Minneapolis	Person, J. P.	Alden
Mortensbak, H. E.	New Ulm	†O'Brien, W. M.	St. Paul	Pertl, A. L.	Canby
Mosby, M. E.	Long Prairie	Ochsner, C. G.	Wabasha	†Peters, G. A.	Rochester
Moses, Joseph, Jr.	Northfield	O'Connor, D. C.	Eden Valley	Petersen, J. R.	Minneapolis
Moses, R. R.	Kenyon	O'Connor, L. J.	St. Paul	Petersen, M. C.	Rochester
†Mouritsen, G. J.	Fergus Falls	†O'Del, H. M.	Rochester	Petersen, P. C.	Braham
†MouseL, L. H.	Rochester	O'Donnell, D. M.	Ortonville	†Petersen, R. T.	Minneapolis
Mueller, R. F.	Two Harbors	O'Donnell, J. E.	Minneapolis	*Petersen, Thorvald	Minneapolis
Mueller, Selma C.	Duluth	Oeljen, S. C. G.	Waseca	Peterson, C. A.	Chisago City
†Muir, W. F.	Graceville	Oerding, Harry	St. Paul	†Peterson, D. B.	St. Paul
Muller, R. T.	St. Paul	†Ogden, Warner	St. Paul	Peterson, E. N.	Virginia
†Mulligan, A. M.	Brainerd	Ohage, Justus, Jr.	St. Paul	Peterson, H. O.	St. Paul
Multhauf, C. J.	Rochester	O'Hanlon, J. A.	Lindstrom	†Peterson, H. W.	Minneapolis
†Murphy, E. P.	Minneapolis	†Olds, G. H.	Waseca	†Peterson, J. H.	Duluth
Murphy, I. J.	Minneapolis	†O'Leary, J. H.	Staples	Peterson, J. L. E.	St. Paul
†Murphy, J. E.	Marshall	O'Leary, P. A.	Rochester	Peterson, N. P.	Minneapolis
†Murphy, J. T.	Rochester	*Oliver, C. I.	Graceville	Peterson, O. H.	Minneapolis
†Murphy, M. E.	Rochester	Oliver, I. L.	Graceville	Peterson, O. L.	Cokato
†Murray, R. A.	Rochester	Olmanson, E. G.	St. Peter	Peterson, P. E.	Minneapolis
†Murray, R. A.	Aitkin	Olsen, A. M.	Rochester	Peterson, R. A.	Vesta
†Musachio, N. F.	Foley	†Olsen, E. G.	Minneapolis	Peterson, V. N.	St. Paul
†Musgrove, J. E.	Rochester	†Olsen, R. L.	St. Paul	Peterson, W. C.	Minneapolis
Mussey, Mary E.	Rochester	Olsen, A. C.	Minneapolis	†Peterson, W. G.	Rochester
†Mussey, R. D.	Rochester	Olsen, A. E.	Duluth	Peterson, W. H.	Minneapolis
†Musty, N. J.	Minneapolis	Olsen, A. O.	Duluth	Petit, L. J.	Minneapolis
Myers, J. A.	Minneapolis	Olsen, C. A.	St. Paul	Petkevich, F. M.	Red Lake Falls
Myers, T. T.	Rochester	†Olsen, C. J.	Belle Plaine	Petraborg, H. T.	Aitkin
Myre, C. R.	Paynesville	Olsen, D. C.	Gaylord	†Pewters, J. T.	Minneapolis
†Naegeli, A. E.	St. Paul	Olsen, E. A.	Pine Island	Peyton, W. T.	Minneapolis
Naegeli, Frank.	Fergus Falls	†Olson, G. E.	West Concord	Pfuetze, K. H.	Cannon Falls
Nagel, H. D.	Waconia	†Olson, J. D.	Rochester	Pfunder, M. C.	Minneapolis
Nash, L. A.	St. Paul	†Olson, L. M.	Chisago City	†Phalen, G. S.	Rochester
†Naslund, A. W.	Minneapolis	Olson, O. A.	Minneapolis	*Phelps, K. A.	Minneapolis
Nauth, B. S.	Winona	†Olson, R. G.	Minneapolis	*Phillips, A. E.	Delano
†Nay, R. M.	Rochester	†Olson, S. W.	Rochester	Phillips, W. H.	Jordan
†Neal, J. M.	Minneapolis	Ongsard, L. K.	Houston	Pierce, C. H.	Wadena
†Neale, R. M.	Rochester	Oppgaard, C. L.	Crookston	Pierson, R. F.	Slayton
Nealy, D. E.	Adrian	Oppgaard, M. O.	Crookston	Piper, M. C.	Rochester
Neary, R. P.	Minneapolis	Oppen, E. G.	Minneapolis	Platow, E. S.	Mountain Lake
†Neel, H. B.	Albert Lea	†O'Reiley, B. E.	St. Paul	†Plonk, N. C., Jr.	Rochester
Neff, W. S.	Virginia	Ostergren, E. W.	St. Paul	Plonk, F. J.	St. Paul
Neibling, H. A.	Rochester	Otto, H. C.	Frazee	Plowman, E. T.	Marble
Nelson, E. H.	Chisholm	Ouellette, A. J.	St. Paul	Plummer, W. A.	Rochester
Nelson, E. J.	Owatonna	Owens, A. H. Jr.	Rochester	†Pohl, J. F.	Watertown
Nelson, E. N.	Minneapolis	†Owens, W. A.	Montevideo	Poirier, J. A.	Minneapolis
Nelson, H. E.	Crookston	†Owre, Oscar	Minneapolis	Pollard, D. W.	Forest Lake
†Nelson, H. S.	Excelsior			Polley, H. F.	Minneapolis
†Nelson, K. L.	Montgomery			Pollock, D. K.	Minneapolis
Nelson, L. A.	St. Paul			Pollock, L. W.	Rochester
†Nelson, L. M.	Minneapolis			†Polmeteer, F. E.	Rochester
†Nelson, L. S.	Hibbing			Polzak, J. A.	Minneapolis
†Nelson, M. C.	Minneapolis			†Pontiro, J. E.	Shakopee
Nelson, M. S.	Granite Falls			Pool, T. L.	Rochester
Nelson, N. H.	Minneapolis			Popovich, S. J.	Rochester
Nelson, N. P.	Brainerd			Popp, W. C.	Rochester
†Nelson, O. L. N.	Minneapolis			Poppe, F. H.	Minneapolis
†Nelson, R. A.	Fergus Falls			Porter, O. M.	Willmar
†Nelson, R. L.	Duluth			†Potek, David	International Falls
†Nelson, W. J.	Minneapolis			Potter, R. B.	Minneapolis
Nelson, W. O. B.	Fergus Falls			Pothoff, C. J.	Minneapolis
†Nesheim, M. O.	Emmons			Power, J. E.	Duluth
Nessa, C. B.	St. Cloud			Powers, F. H.	Rochester
†Nesett, L. B.	Minneapolis			Prangen, A. D.	Rochester
†Nester, H. D.	Rochester			Pratt, F. J.	Minneapolis
†Néumaier, Arthur	Glencoe			Pratte, J. H., Jr.	Rochester
Neumann, C. A.	Winona			Preine, I. A.	Minneapolis
New, G. B.	Rochester			Preisinger, J. W.	Renville
†Newell, F. W.	St. Paul			Prendergast, H. J.	St. Paul
Newhart, Horace	Minneapolis			†Preston, F. W.	Rochester
Nichols, A. E.	St. Paul			†Preston, L. F.	Rochester
Nichols, D. R.	Rochester			Preston, P. J.	Minneapolis
Nicholson, M. A.	Duluth			Prickman, L. E.	Rochester
†Nickel, W. R.	Rochester			†Priest, R. E.	Minneapolis
†Nielsen, A. M.	Northfield			†Priestley, J. T.	Rochester
Niclson, W. L.	Rochester			Prim, J. A.	Minneapolis
Nilson, H. J.	Mankato			†Prins, L. R.	Albert Lea
Ninneman, N. N.	Waconia			Proeschel, R. K.	Willmar
†Nissen, A. S.	St. Peter			Proffit, W. E.	Minneapolis
Noble, J. F.	St. Paul			Proshiek, C. E.	Minneapolis
Noble, J. L.	Dayton, Ohio			†Proudft, C. H.	Rochester
†Nolan, D. E.	Minneapolis			Pruitt, R. D.	Rochester
†Noonan, W. J.	Minneapolis			Pugh, D. G.	Rochester
Noran, H. H.	Caledonia			Pugh, P. F. H.	Rochester
Norberg, C. E.	Cloquet			Purves, G. H.	Hendricks
Nordin, G. T.	Minneapolis			Puumala, R. H.	Cloquet
Nordland, Martin	Minneapolis			Pyle, Marjorie M.	Rochester
Nordman, W. F.	Mora			Quanstrom, V. F.	Brainerd
Norman, J. F.	Crookston			†Quattlebaum, Frank	Rochester
Norris, N. T.	Caledonia			†Quello, R. O. B.	Minneapolis
Noth, H. W.	Minneapolis			†Quinby, T. F.	Minneapolis
Notier, V. A.	Rochester			Quist, H. W.	Minneapolis
Novak, E. E.	New Prague			Raadquist, C. S.	Hibbing
†Nuebel, C. J.	St. Paul			Radabaugh, R. C.	Hastings
Nuessle, W. G.	Springfield			†Radcliffe, James, Jr.	Rochester
Nuetzman, A. W.	Faribault			Rademaker, William	Tacoma, Wash.
Nutting, R. E.	Duluth				

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Raetz, S. J.	Maple Lake	Rowe, O. W.	Duluth	St. Paul
Raihala, John	Virginia	Rowe, W. H.	Fairmont	Dexter
Raiter, R. F.	Cloquet	Rowland, W. D.	Rochester	Minneapolis
†Ramsey, R. M.	St. Paul	Rowles, E. K.	Coleraine	Duluth
†Ramsey, W. R.	St. Paul	Roy, P. C.	St. Paul	St. Paul
Randall, A. M.	Ashby	Rucker, C. W.	Rochester	Winthrop
Randall, L. M.	Rochester	Rucker, W. H.	Minneapolis	St. Paul
Ransom, M. L.	Hancock	Rud, N. E.	Minneapolis	Albert Lea
Rasmussen, R. C.	St. Paul	Rudell, G. L.	Minneapolis	Minneapolis
†Rasmussen, W. C.	Rochester	†Rudie, P. S.	Duluth	St. Paul
†Raszkowski, H. J.	Rochester	†Ruggles, G. M.	Forest Lake	Swanville
†Ratcliffe, J. J.	Aitkin	Rubbberg, G. N.	St. Paul	Minneapolis
*Rathbun, C. A.	St. Cloud	†Rulison, E. T., Jr.	Rochester	Mountain Lake
Raymond, J. H.	Canby	†Rumpf, C. W.	Fairbault	Minneapolis
†Rea, C. E.	St. Paul	†Rumpf, W. H.	Fairbault	Hibbing
Reeve, E. A. T.	Elbow Lake	†Rushton, J. G.	Rochester	Minneapolis
Reff, A. R.	Crookston	Russ, F. H.	Rochester	St. Paul
Regan, J. M.	Rochester	Russ, H. H.	Blue Earth	Benson
Regnier, E. A.	Minneapolis	†Russeth, A. N.	Minneapolis	St. Paul
Reichelderfer, C. F.	Staples	Rusten, E. M.	Minneapolis	Minneapolis
Reid, L. M.	Excelsior	Rutherford, W. C.	St. Paul	Minneapolis
Reif, H. A.	Minneapolis	Rutledge, L. H.	Detroit Lakes	Rochester
†Reif, H. J.	St. Paul	Ryan, B. F.	Rochester	Minneapolis
†Reineke, G. F.	New Ulm	Ryan, J. D.	Milaca	Duluth
†Reiter, H. W.	Shakopee	Ryan, J. J.	St. Paul	Rochester
Rempel, D. D.	Lester Prairie	†Ryan, J. M.	St. Paul	Minneapolis
Replodge, W. H.	Wabasha	Ryan, M. E.	St. Paul	Excelsior
†Rewbridge, A. G.	Minneapolis	Ryan, W. J.	Duluth	New Ulm
Reynolds, J. S.	Minneapolis	Rydberg, W. C.	Brooten	Barnesville
Rice, C. O.	Minneapolis	Ryding, V. T.	Starbuck	Dassel
†Rice, H. G.	Moorhead	Rynearson, E. H.	Rochester	Selma
†Rice, H. R.	Roseau			I. D.
Richards, E. T. F.	St. Paul			St. Paul
Richards, W. B.	St. Cloud			Seneca
†Richardson, F. S.	Minneapolis			C. R.
Richardson, H. E.	St. Paul			New Ulm
†Richardson, R. J.	Rushford			Enumclaw
Richdorf, L. F.	Minneapolis			Wash.
†Rick, P. F. W.	St. Paul			Rochester
Ridgway, A. M.	Armandale			St. Paul
Rieke, W. W.	Wayzata			Seaham
Rigler, L. G.	Minneapolis			Max.
Rimer, E. W.	Breckenridge			Seifert
†Rinehart, R. E.	Rochester			M. H.
Ringle, O. F.	Walker			Seifert
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Ripple, R. J.	New London			S. B.
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Ritt, A. E.	St. Paul			S. R.
Rivers, A. B.	Rochester			Sellers
Rives, H. F.	Rochester			G. K.
†Rizer, D. K.	Minneapolis			Selmo
Rizer, R. I.	Minneapolis			I. D.
Roan, C. M.	Minneapolis			Selvig
Robbins, C. P.	Minneapolis			†Sengpiel
Robbins, O. F.	Minneapolis			G. W.
†Roberts, L. J.	Minneapolis			†Senkler
†Roberts, O. W.	Minneapolis			G. E.
†Roberts, S. W.	Minneapolis			Senn
Roberts, T. S.	Minneapolis			E. W.
Robertson, W. B.	Minneapolis			Serkland
Robertson, H. E.	Rochester			J. C.
†Robertson, J. B.	Minneapolis			Sessions
Robertson, P. A.	Minneapolis			J. C.
Robilliard, C. M.	Austin			Sether
†Robinson, F. J.	Faribault			H. J.
†Robinson, J. M.	Corning, N. Y.			†Seybold
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Robson, J. T.	Rochester			Shaleen
Rochford, W. E.	Minneapolis			A. W.
Rodda, F. C.	Minneapolis			Shandorf
Roehlike, A. B.	Elk River			J. F.
†Roemer, H. J.	Winona			Shands
Rogers, C. W.	Heron Lake			*Shannon
†Rogers, J. D.	Rochester			S. S.
Rogers, S. F.	St. Paul			Shannon
†Rogne, W. G.	Spring Grove			W. R.
Roholt, C. L.	Waverly			Shaperman
Rohrer, C. A.	Waterville			Eva P.
Rokala, H. E.	Virginia			Shapiro
Rorig, D. H.	Howard Lake			E. Z.
Rood, D. C.	Duluth			Shapiro
Rose, J. T.	Lakefield			M. J.
Rosenbladt, Louis	St. Paul			Sharp
†Rosendahl, F. G.	St. Paul			D. V.
Rosenfield, A. B.	St. Paul			†Sharpe
†Rosenholz, B. I.	St. Paul			W. S.
Rosenow, E. C.	Rochester			Shastid
†Rosenow, J. H.	Rochester			T. H.
†Rosenthal, F. H.	Grand Meadow			Shaw
Rosenthal, Robert	St. Paul			A. W.
Rosenwald, R. M.	Minneapolis			Lake Park
Roskilly, G. C. P.	Minneapolis			Shedlov
†Ross, A. J.	Minneapolis			Abraham
†Rossen, R. X.	Hastings			Sheedy
†Roth, F. D.	Lewiston			C. L.
Roth, G. C.	St. Paul			†Shelden
Roth, R. R.	Rochester			W. D.
Rothschild, H. J.	St. Paul			Shellman
Roust, H. A.	Montevideo			J. L.
Rousuck, A. A.	Rochester			Pacific Palisades, Calif.
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				V. D.
				Sheppard
				C. G.
				Sheppard
				P. E.
				Sher
				D. A.
				Rochester
				Shiridan
				R. B., Jr.
				Stillwater
				Sherman
				C. H.
				Sherman
				C. L.
				Sherman
				R. V.
				Sherwood
				G. E.
				Kimball
				†Schick
				R. M.
				Shima
				G. J.
				†Shimonek
				S. W.
				Shonyo
				E. S.
				†Short
				Jacob
				†Shrader
				J. S.
				Lamberton
				Rochester
				†Shullenberger
				C. C.
				Rochester
				†Sidell
				R. H.
				Oak Terrace
				Siegel
				Clarence
				Siegel
				J. S.
				Siegmann
				W. C.
				Silver
				Henry
				Silver
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				†Simons
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				Simonton
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				Minneapolis
				Simpson
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				Hibbing
				Sinmark
				Andrew
				St. Paul
				Singer
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				Sinskyin
				M. B.
				Minneapolis
				Siperstein
				D. M.
				Minneapolis
				Sisler
				C. E.
				Grand Rapids
				†Sivertsen
				Andrew
				Wayzata
				Swanville
				Sivertsen
				Ivar
				Minneapolis
				†Sjostrom
				L. E.
				Storden
				Chatfield
				†Skaug
				H. M.
				Skinner
				H. O.
				St. Paul
				Skjold
				Minneapolis

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†Sloan, Julius	Minneapolis	Rochester	†Tweedy, J. A.	Rochester
Slocumb, C. H.	Rochester	Rochester	Tweedy, R. B.	Winona
†Sluder, F. S., Jr.	Rochester	Minnepolis	†Twyman, R. A.	Rochester
†Smalley, R. E.	Rochester	Minneapolis		
Smisek, E. A.	St. Paul	Cloquet	Ude, W. H.	Minneapolis
Smisek, F. M. E.	Minneapolis	Rochester	Uhley, C. G.	Crookston
*Smith, A. E.	Minneapolis	Faribault	Ulrich, E. C.	Rochester
†Smith, A. L.	Rochester	Rochester	†Uhlein, Alfred	Rochester
Smith, Adam M.	Minneapolis	Stillwater	Ulrich, H. L.	Minneapolis
Smith, Archie M.	Minneapolis	Minneapolis	†Underdahl, L. O.	Rochester
Smith, B. A.	Crosby	Minneapolis	Undine, C. A.	Minneapolis
Smith, C. M.	Duluth	Minneapolis	†Urban, D. A.	Rochester
Smith, F. D.	Rochester	Minneapolis	Urbger, S. E.	Duluth
Smith, F. H.	Rochester	Minneapolis		
Smith, F. L.	Rochester	Minneapolis		
Smith, G. G.	Fulda	Minneapolis	Vaaler, Torvald	Cannon Falls
Smith, H. L.	Rochester	Minneapolis	Vadheim, A. L.	Tyler
Smith, H. R.	Minneapolis	Grand Rapids	†Vail, J. B.	Henning
†Smith, L. A.	Balaton	Rochester	Valentine, W. H.	Tracy
Smith, L. G.	Rochester	St. Paul	†Van Demark, R. E.	Rochester
Smith, Montevideo	Minneapolis	Virginia	†Vandersluis, C. W.	Bemidji
Smith, Margaret I.	Minneapolis	Minneapolis	Van Meier, Henry	Stillwater
Smith, M. W.	Red Wing	Albert Lea	†Van Valkenberg, J. D.	Floodwood
Smith, N. D.	Rochester	Duluth	Varney, J. H.	Rochester
Smith, N. M.	Minneapolis	Swanville	Vaughan, V. M.	Truman
Smith, V. D. E.	St. Paul	Minneapolis	†Vaughn, L. D.	Rochester
Smith, W. R.	Grand Marais	Minneapolis	Veirs, D. M.	St. Paul
Snell, A. M.	Rochester	Minneapolis	Veirs, Ruby J. S.	St. Paul
†Snider, G. G.	Rochester	Minneapolis	Venables, A. E.	St. Paul
Snyder, G. W.	St. Paul	Minneapolis	Veranath, L. A.	St. Cloud
†Snyker, O. E.	Ely	Minneapolis	Verzina, J. C.	Mapleton
Soderlind, R. T.	Minneapolis	Minneapolis	Vigran, Myron	Rochester
Sogge, L. L.	Windom	Duluth	Vik, A. E.	Minneapolis
Sohilberg, O. I.	St. Paul	Waseca	Vik, Melvin	Onamia
Sohmer, A. E.	Mankato	Buffalo	†Virnig, M. P.	Wells
Solhaug, S. B.	Minneapolis	Brielyn	†Vogel, H. A. L.	New Ulm
Solsem, F. N.	Ah-Gwah-Ching		Von der Weyer, W. H.	New Ulm
Sommer, A. W.	Elmore			St. Paul
Sommers, Ben.	St. Paul			
†Sonnesyn, N. N.	Le Sueur			
†Sorem, M. B.	St. Paul			
Sorum, F. T.	Jasper			
Souster, B. B.	St. Paul			
Spang, A. J.	Duluth			
Spang, J. S.	Duluth			
†Spano, J. P.	Minneapolis			
Spar, A. A.	Rochester			
†Sperling, Louis	Minneapolis			
Spicer, F. W.	Duluth			
Spink, W. W.	Minneapolis			
†Spittler, R. O.	New Richland			
Sprafka, J. M.	St. Paul			
Sprague, R. G.	Rochester			
Spratt, C. N.	Minneapolis			
Spurbeck, R. G.	Cloquet			
Surzem, R. J.	Anoka			
†Stafford, C. E.	Baudette			
Stanford, C. E.	Minneapolis			
Stangl, P. E.	St. Cloud			
Stanley, C. R.	Worthington			
†Stark, F. M.	Rochester			
Starekow, M. D.	Thief River Falls			
†Stebbins, T. L.	Minneapolis			
Steffens, L. A.	Red Wing			
Stein, K. E.	Lakeville			
Stein, R. J.	Pierz			
†Steinberg, C. L.	St. Paul			
Steiner, I. W.	Winona			
Stelter, L. A.	Minneapolis			
†Stemsrud, H. L.	Alexandria			
Stephan, E. L.	Hinckley			
Sternier, E. G.	St. Paul			
Sternier, E. R.	St. Paul			
Sternier, O. W.	St. Paul			
Stevens, John	Gonvick			
Stevenson, B. M.	Fulda			
Stevenson, F. W.	Faribault			
Stewart, Alexander	St. Paul			
†Stewart, D. E.	Grand Rapids			
†Stewart, N. E.	Lakewood, Ohio			
Stewart, R. I.	Minneapolis			
Stickney, J. M.	Rochester			
Stillwell, W. C.	Mankato			
Stilwell, G. G.	Rochester			
Stinnette, S. E.	St. Paul			
Stocking, F. F.	Hallock			
Stoesser, A. V.	Minneapolis			
Stolpestad, A. H.	St. Paul			
†Stolpestad, H. L.	St. Paul			
†Stomel, Joseph	Los Angeles, Calif.			
Stone, S. P.	Minneapolis			
Stotler, J. F.	Rochester			
†Stout, H. A.	Rochester			
†Stover, Lee	Rochester			
†Strachauer, A. C.	Minneapolis			
†Stransky, T. W.	Watertown			
Strate, G. E.	St. Paul			
Strathern, C. S.	St. Peter			
Strathern, F. P.	St. Peter			
Strathern, M. L.	Gilbert			
†Stratte, A. K.	Pine City			
Stratte, H. C.	Windom			
†Straus, M. L.	St. Paul			
†Street, Bernard	St. Cloud			

# ROSTER 1945

Westby, Magnus.....	Madison	St. Paul	St. Peter
Westby, Nels.....	Madison	Slayton	Minneota
Westerman, A. E.....	Montgomery	Cannon Falls	Rochester
Westphal, K. F.....	Minneapolis	Kankakee, Ill.	Rochester
Westerman, F. C.....	Montgomery	Minneapolis	Rochester
Wethall, A. G.....	Minneapolis	St. Paul	Rochester
Wetherby, Macnider.....	Minneapolis	Rochester	Chatfield
Weum, T. W.....	Minneapolis	Rochester	St. Paul
Wheeler, D. W.....	Duluth	Litchfield	Tracy
Wheeler, M. W.....	St. Paul	Litchfield	Rochester
Whitacre, J. C.....	St. Paul	Blue Earth	Campbell
White, A. A.....	Minneapolis	Rochester	Minneapolis
White, J. D.....	Rochester	Rochester	Luverne
White, R. R., III.....	Rochester	Worthington	Minneapolis
White, S. M.....	Minneapolis	St. Paul	Minneapolis
White, W. D.....	Minneapolis	Rochester	Rochester
Whitesell, L. A.....	Minneapolis	St. Paul	Shakopee
Whitehouse, F. R.....	Rochester	Rochester	Minneapolis
Whitlock, G. F.....	Rochester	Winona	Minneapolis
Whitmore, F. W.....	St. Paul	Rochester	Duluth
Whitney, R. A.....	Cambridge	Minneapolis	Winona
Whiton, S. A.....	Albert Lea	Northfield	St. Paul
Whittemore, D. D.....	Bemidji	Lake City	Marshall
Widen, W. F.....	Minneapolis	Rochester	Rochester
Wiechman, F. H.....	Montgomery	Minneapolis	Minneapolis
Wilcox, A. E.....	Minneapolis	Crosby	Young
Wildebush, F. F.....	Minneapolis	St. Paul	Young
Wilder, K. W.....	Minneapolis	Rochester	Younger
Wilder, R. L.....	Minneapolis	Duluth	Winona
Wilder, R. M.....	Rochester	St. Paul	Youngren
Wilder, R. M., Jr.....	Rochester	Mankato	St. Paul
Wilken, P. A.....	Minneapolis	Springfield	
Wilkinson, Stella L.....	Moose Lake	No. Mankato	
Wilksoske, R. J.....	Owatonna	St. Paul	
Will, C. B.....	Bertha	Minneapolis	
Will, W. W.....	Bertha	St. Paul	
Willcutt, C. E.....	Minneapolis	St. Paul	
Williams, A. B.....	St. Paul	St. Paul	
Williams, C. A.....	Pipestone	St. Paul	
Williams, C. K.....	St. Paul	St. Paul	
Williams, J. A.....	Hibbing	St. Paul	
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Red Wing, Minnesota

### STATE BOARD

Members of the Minnesota State Medical Association Auxiliary met in St. Paul, May 17 and 18. An Executive Board meeting was held on Thursday morning, May 17. Mrs. Anthony J. Bianco, state president, presided. A luncheon in the Casino of the Hotel St. Paul followed the meeting. Members planning this affair were Mrs. Charles W. Wass and Mrs. J. C. Ferguson, co-chairmen, and Mrs. R. T. Muller and Mrs. Alex McEwan. In the afternoon the Ramsey County Medical Auxiliary were hostesses at a tea from 3 to 5 p.m. The tea was open to local and visiting members. The arrangements for the tea were made by the co-chairmen, Mrs. William H. Von der Weyer and Mrs. J. Richards Aurelius. Presiding at the tea table were Mmes Edward Schons, Ernest M. Hammes, John J. Ryan, Harry B. Zimmermann and Lloyd G. Dack. Mrs. Anthony J. Bianco, state president, and Mrs. E. V. Goltz, president-elect, were guests of honor.

The annual meeting of the organization was held on Friday morning, May 18, in the Hotel St. Paul. The meeting was opened with the Pledge of Allegiance to the Flag and the Auxiliary Pledge of Loyalty led by Mrs. W. H. Rucker of Robbinsdale. Mrs. Herman Kesting, president of Ramsey County Auxiliary, gave the address of welcome. Mrs. H. W. Satterlee of Lewiston gave the response. The Memorial Service was conducted by Mrs. S. C. G. Oeljen of Waseca. The reports of the officers and the county presidents were heard. Election of officers for the next year was the final item of business.

At the luncheon which followed the business meeting Mrs. E. M. Hammes awarded the President's pin to Mrs. E. V. Goltz, the new president, and the other officers were presented to the group.

Dr. William A. O'Brien, of the University of Minnesota, gave the address, "The Evaluation of Medicine."

A post convention meeting of the Board of Directors was held immediately following the luncheon program.

### MOWER COUNTY

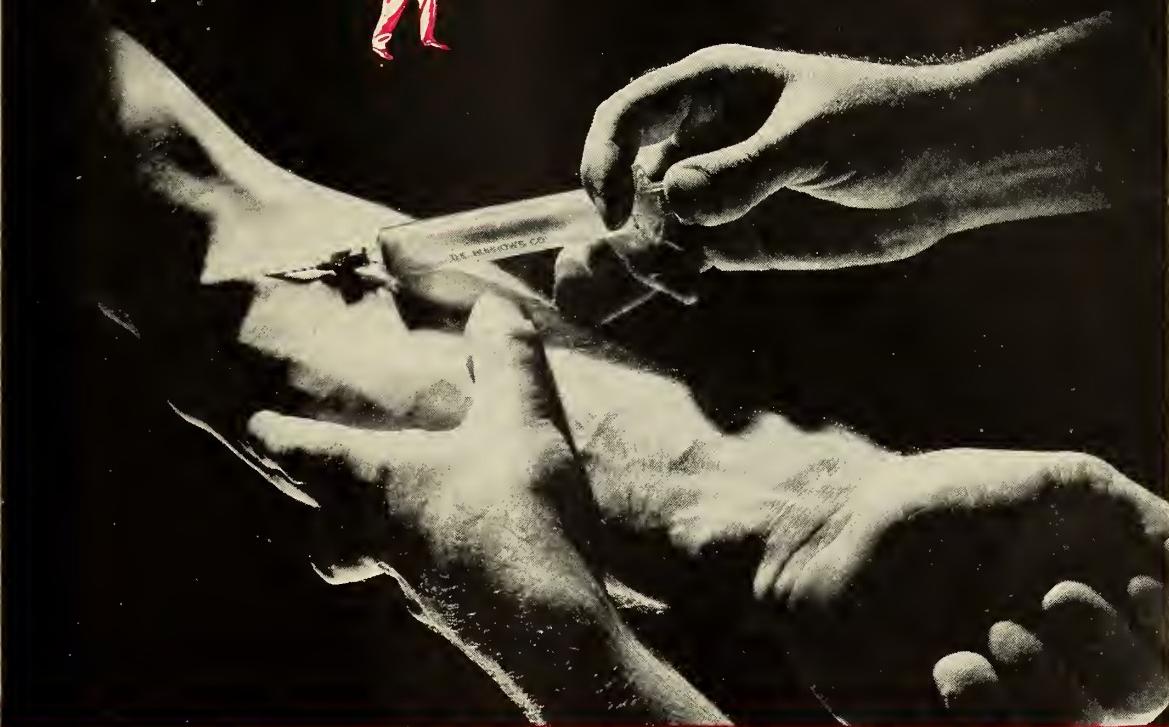
Mrs. C. C. Allen was named president of the Women's Auxiliary to the Mower County Medical Society. The meeting was held at the home of Mrs. J. K. McKenna.

Other officers for the new year include Mrs. H. B. Allen, vice president, Mrs. B. J. Cromwell, secretary, and Mrs. L. G. Flanagan, treasurer.

A social hour followed the business meeting.

*(Turn to Page 506)*

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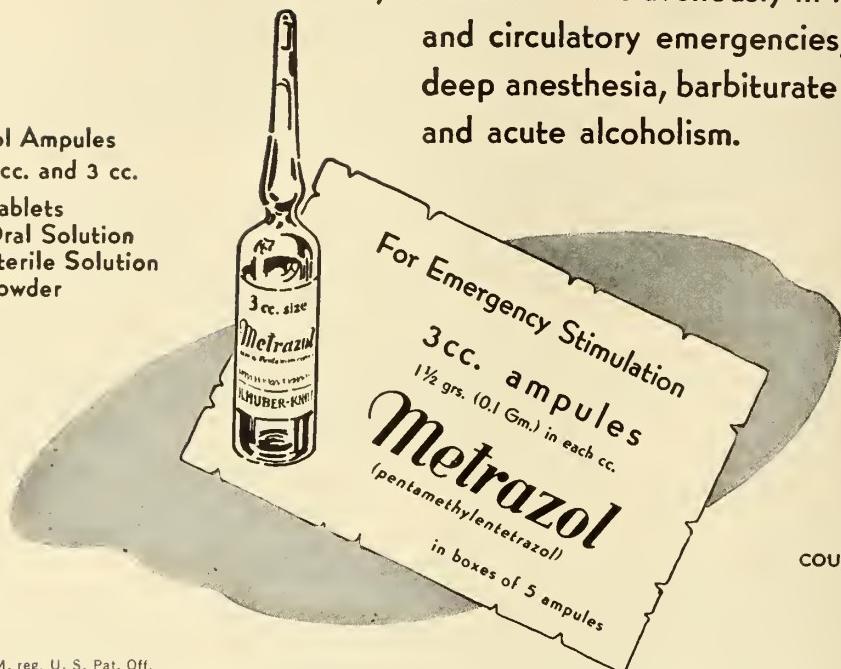
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## Woman's Auxiliary

(Continued from Page 504)

### HENNEPIN COUNTY

The annual luncheon meeting was held on May 4, at one o'clock at 510 Groveland, Minneapolis. Short annual reports were given by the board members followed by the election of officers. Mrs. C. N. Borman was luncheon chairman, assisted by Mrs. G. M. Kelby. Mrs. G. T. Nordin made arrangements for all past presidents to be seated together.

The Hennepin County Medical Auxiliary has just completed its fourth annual Medical and Surgical Relief Drive. This year the office of every doctor in Hennepin County was contacted by thirty-two members who visited offices in twenty-five districts. Surplus and discarded materials were plentiful. Boy Scouts collected the materials in the downtown areas and members of the Auxiliary in the outlying areas. This is a cause started in Hennepin County and endorsed by the National Auxiliary last year. Mrs. Harold A. Wahlquist was chairman of this project.

Mass surveys of industrial workers, students, and army inductees have demonstrated quite clearly their usefulness in discovering unsuspected tuberculosis, but one large reservoir of tuberculous infection has thus far been almost entirely overlooked—those patients admitted to our general hospitals. Only a few hospitals and clinics in the country have adopted a program of routine roentgenographic examination of all patients, regardless of the nature of their complaint.—KARL H. PFUETZE, M.D., Mineral Springs Sanatorium, Cannon Falls, Minnesota.



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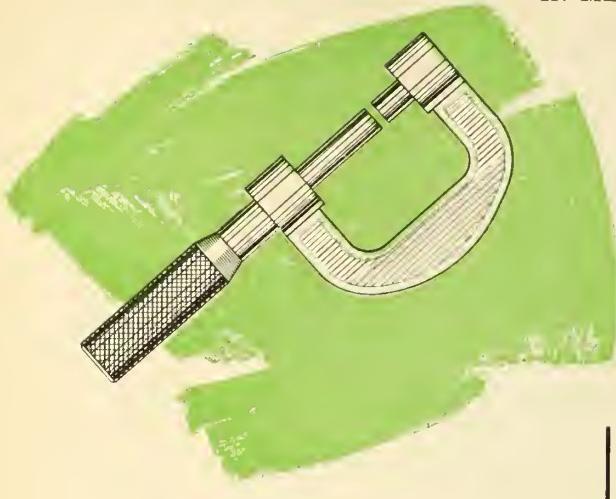
<sup>1</sup>. Am. J. Dis. Child. 54: 1227, 1937.



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## In Memoriam

### HENRY GUSTAVE BLANCHARD

Dr. H. G. Blanchard of Fairmont died April 13, 1945, in his quarters in the Fairmont County Hospital at the age of seventy-seven.

Dr. Blanchard was born April 17, 1868, in Winona County, Minnesota. He attended the Winona High School and the University of North Dakota at Grand Forks, but left in his junior year to take up medicine at the University of Minnesota where he graduated in 1897.

He practiced at Hutchinson from 1897-98 and at Waseca from June, 1898, to October, 1928, when he moved to Fairmont.

### HENRY CLINTON COONEY

Dr. Henry C. Cooney died at his home in Princeton, Minnesota, on April 1, 1945, at the age of eighty-two. Death was due to cardiac decompensation.

Dr. Cooney was born in Afton, Washington County, Minnesota, on April 19, 1863. He attended St. Croix Academy at Afton and Carleton College and was graduated from the College of Physicians and Surgeons, Chicago, in February, 1887. After practicing three months in Atwater, Minnesota, and six months in Valley Springs, South Dakota, he located in Princeton (March, 1888), practicing there until 1898, when he left to do postgraduate work in surgery. He was graduated from Post Graduate Hospital, Chicago, in 1899.

In 1900 Dr. Cooney was surgical assistant to Dr. Franklin H. Martin in Chicago, then returned to Princeton and specialized in general surgery. He owned and operated the Northwestern Hospital in Princeton from 1900 until 1942. Dr. Cooney became a Fellow of the American College of Surgeons in 1914. He was a member of the East Central, Northern Minnesota, Southern Minnesota, Minnesota State, and American Medical Associations and an honorary member of the Academy of Medicine. He had been president of the Northern Minnesota Medical Association and served in the House of Delegates in the state organization for many years.

Until 1943, when failing strength prevented his further attendance, Dr. Cooney had attended regularly all State Medical Association meetings. He continued attending the East Central meetings until 1944. His interest and enthusiasm were an inspiration to his fellow members. He maintained for many years a large practice in the Princeton area and was widely known in that section of the state. He was highly esteemed by his colleagues and universally beloved by his fellow citizens. In 1937 he was honored by a testimonial dinner tendered him on his seventy-fifth birthday, commemorating the beginning of his fiftieth year of practice in Princeton.

Until March, 1944, Dr. Cooney was the local health  
(Continued on Page 510)

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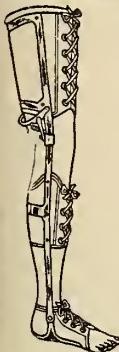
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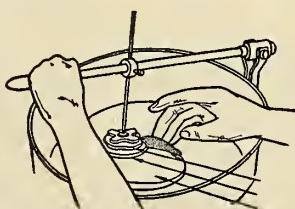
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## IN MEMORIAM

(Continued from Page 508)

officer. He had served in that capacity for various periods previously and had found time to further and promote public health measures in the schools of Mille Lacs County. He was local surgeon for the Great Northern Railway for more than thirty years. He was not in active practice during the last year of his life but was frequently called in consultation up to the last week he lived.

Dr. Cooney is survived by his widow, foster son, and by a brother and a sister.

### WILLIAM DE COSTER

Dr. William De Coster of Mankato died suddenly March 26, 1945, at the age of seventy.

Dr. De Coster was born August 25, 1874, in Florida. He obtained his M.D. from the University of Minnesota in 1897, and practiced at Windom, Madelia, and Minneapolis before moving to Mankato in 1914.

### ROBERT S. FORBES

Dr. Robert S. Forbes, a prominent surgeon of Duluth, died April 9, 1945, at the age of fifty-nine.

Dr. Forbes was born in St. Paul, July 8, 1886, but at an early age moved with his family to Duluth, where he attended Central High School.

After two years in the University of Minnesota Medical School, he graduated from the University of Pennsylvania Medical School in 1910. He served as intern at St. Christopher and the Presbyterian Hos-

pital in Philadelphia. He took postgraduate work in the New York Post-Graduate School and at the University of Vienna in 1922-25.

He was a member of the American College of Surgeons, the St. Louis County Medical Society, the Minnesota State and American Medical Associations. He was a Scottish Rite Mason, a past master of Euclid Lodge, and a member of the Shrine. He belonged to the Duluth Athletic Club and the Northland Country Club.

He is survived by his widow, Margaret Hough Forbes, a daughter, and one brother, Mason M. Forbes of Carmel, California.

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## ♦ Of General Interest ♦

Dr. Louis A. Buie, of the Rochester Clinic, has been in Lansing, Michigan, where he addressed the Ingham County Medical Society on "Lesions of the Terminal Portion of the Colon."

\* \* \*

Dr. Ralph Ghormley, of the Mayo Clinic, was guest speaker at a meeting of the Adams County Medical Society in Quincy, Illinois. His subject was "Backache and Vertebrae Lesions."

\* \* \*

Dr. Neil McLean Leitch closed his office in Warroad on June 1 and has located permanently in Havre, Montana. Most of his office equipment was disposed of to the Warroad Hospital.

\* \* \*

Dr. James Oliver, of Chicago, is now located at Moorhead, where he has opened offices in the Dommer Building. A graduate of Northwestern University, Dr. Oliver served his internship at Ancker Hospital, St. Paul. He is a member of Phi Chi fraternity.

\* \* \*

Dr. Julius Feinstein, who has been in Seattle for some time, has returned to Minneapolis and opened offices at Nicollet Avenue and Thirty-second Street. Dr. Feinstein will also serve as physician at the Gopher Ordnance Plant.

Dr. L. M. Hammar, of the staff of the hospital in Two Harbors, a lieutenant senior grade in the United States Naval Reserve, reported for active duty in San Francisco on May 7. During his absence Mrs. Hammar and the family will remain in Two Harbors.

\* \* \*

"Differential Diagnosis of Diseases of the Eye" and "Surgical Treatment of the Eye" were the subjects of two lectures given by Dr. Avery de Hart Prangen, of Rochester, to the postgraduate group in ophthalmology at the Children's Memorial Hospital in Chicago.

\* \* \*

Because of their inability to secure adequate help, the board of directors of the Clarkfield Community Hospital were forced to close the institution temporarily on May 1. Dr. Malvin I. Hauge will continue to occupy his offices in the hospital building and will maintain regular office hours.

\* \* \*

Dr. C. N. Harris, Hibbing, was re-elected to a five-year term on the board of directors of the St. Louis Tuberculosis and Health Association at the annual meeting in Duluth. Dr. R. P. Pearsall, Virginia, was also re-elected. In discussing the number of new cases of tuberculosis being discovered as a result of the mobile program, Dr. G. A. Hedberg, superintendent of the

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Nopeming Sanatorium, emphasized the need of increasing facilities for the care of these patients.

\* \* \*

The annual E. R. Squibb award for outstanding research has been conferred on Dr. E. C. Kendall, of the Mayo Clinic, by the Association for the Study of Internal Secretions in recognition of Dr. Kendall's isolations of thyroxin and his more recent work on hormones of the adrenal cortex.

\* \* \*

Lieutenant W. B. Wells recently completed twenty-seven months of sea duty in the South and Central Pacific areas, part of the time (nine months) in a Mobile Hospital and the remainder aboard a destroyer mine sweeper. He is now stationed at the U. S. Naval Hospital, Great Lakes, Illinois.

\* \* \*

Dr. Isadore Fisher has returned to his home in Ceylon after several weeks in a Duluth hospital where he was treated for a recurrent ailment. Although Dr. Fisher has resumed his practice, he is still under doctor's orders which forbid his customary visits in Duluth or holding evening office hours.

\* \* \*

Dr. A. M. Lundholm, St. Paul, has been elected treasurer by the Board of Christian Service of the Minnesota Lutheran Conference. With the other officers, Dr. Lundholm will assist in planning and recently authorized a \$350,000 nurses' home for Bethesda Hospital in St. Paul, which is operated by the conference.

\* \* \*

The appointments of Dr. O. L. McHaffie as chief surgeon of the Duluth, Missabe & Iron Range Railway, and Dr. R. F. Mueller as associate surgeon, have been announced by the president of the company, Paul H. Van Hoven. Dr. McHaffie's headquarters will be at the West Duluth Clinic and Dr. Mueller's in Two Harbors.

\* \* \*

Dr. Owen Wangensteen, head of the surgery department of the University of Minnesota, has been appointed a member of the three-man medical commission to be sent to Russia. While the exact mission of the commission has not yet been divulged, it is generally assumed that its purpose is the study and exchange of medical procedures developed by the two countries.

Dr. Wangensteen, a graduate of the University of Minnesota Medical School, studied in Europe in 1927 and 1928.

\* \* \*

Physicians in the vicinity of South St. Paul, Hastings, Newport, Rosemount, Farmington, Lakeville, Elko, Savage, Prior Lake, Hampton, Empire, Eureka Center, Inver Grove, Mendota, New Trier, Nininger, Lilydale, Waterford, Vermillion, St. Paul Park, Newport, Cottage Grove, Afton, Lakeland, and surrounding rural areas, who have experienced difficulty in securing wheel chairs for the use of patients in their homes will be pleased to know that the Lyle Russell Post No. 1210, Veterans of Foreign Wars, is sponsoring a plan to purchase several wheel chairs for use in these communities.

These chairs will be loaned to any one needing them without charge, other than the cost of delivery.

\* \* \*

Dr. E. E. Novak celebrated the fiftieth anniversary of his medical practice in New Prague on April 29 at a dinner with friends and neighbors. Despite carrying a heavy town and country practice, Dr. Novak has always been actively interested in the civic affairs of his community. A successful farmer, he was instrumental in founding the Southern Minnesota Livestock Show and in organizing the New Prague Creamery Association. For almost forty years he was a member of the local school board, most of the time serving as president. He was also president of the State School Board for several terms, and has been a regent of the University of Minnesota since 1937. He assisted in the founding of the First National Bank in New Prague and was president of the State Bank there for nine years. Intensely interested in politics, Dr. Novak has been mayor of his home town and has also cast a presidential elector's vote. Half a century of such activity could justifiably indicate retirement, but Dr. Novak expects to carry right on.

\* \* \*

Announcement has been made of the transfer of Major R. Lee Clark from Wright Field, Dayton, Ohio, to Randolph Field, Texas, where he will be director of the recently established Department of Surgery of the School of Aviation Medicine. He has also been

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appointed director of medical research for the Army Air Forces, and will continue to serve as surgical consultant of Army Air Forces for the Central District which includes Texas, Louisiana, Arkansas, Oklahoma, Colorado, Missouri, New Mexico, Iowa, Minnesota, both Dakotas and Nebraska.

Major Clark received his M.S. in surgery from the University of Minnesota, and he was a fellow in surgery at the Mayo Clinic from April, 1935 to October, 1939.

## HOSPITAL ACTIVITIES

The Hospital Association of St. Luke's in Duluth returned all their officers for another term in the election held at the hospital on May 9. B. Murray Peyton is president; S. W. Tarr, vice president; J. A. MacFayden, secretary and assistant treasurer, and Lane MacGregor, treasurer. One new director, G. A. Andresen, was elected. Those re-elected were Kenneth S. Cant, Walter Congdon, Mr. Peyton, and Mr. Tarr.

\* \* \*

Dina Bemness was made president of the Minnesota Hospital Association in the election of officers which concluded the two-day annual convention in Minneapolis during the first week of May. Miss Bemness is administrator of the Community Hospital in Glenwood. W. W. Raymond, administrator of the Itasca County Hospital, was named president-elect to take office in 1946. Vice presidents for 1945 are Sister Anna Bergland, of the Deaconess Hospital, Minneapolis, and E. H. Hauge, administrator of Fairview Hospital. Nellie Gorgas, administrator of St. Barnabas Hospital, Minneapolis, was re-elected treasurer, and Dr. A. F. Branton, of Willmar, secretary. Frances Eckman, Miller Hospital, Duluth, and Sister Ignatius, St. Joseph's Hospital, St. Paul, were made members of the board of directors.

Dr. Thomas E. Broadie, superintendent of Ancker Hospital, St. Paul, is the retiring president.

\* \* \*

Committees to plan the organizational setup of the proposed Worthington community hospital and arrange for a long-term loan have been appointed by the local Civic and Commerce Association. E. W. Kane and A. H. Hoodecheck are in charge of loan arrangements. Craigen Thom is chairman of the committee on the formation of a board of directors, assisted by A. W. Brecht and F. Rahdy Rickbeil. With \$72,000 already contributed and each of the twenty-one members of the soliciting committee pledged to raise an additional \$1,000, the fund is expected to top \$90,000 in the near future.

\* \* \*

Governor Thye has appointed a committee of nineteen selected from various parts of the State to make a survey of Minnesota's hospital and public health facilities. The committee will also confer with the State Postwar Council in developing a five-point program for the improvement of public health, raising hospital standards, to determine adequacy of existing facilities,



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\* \* \*

Seventy-five per cent of the \$10,000 goal for the Kellicher community hospital had been pledged by the middle of May, which was considered as very satisfactory. The annual meeting of the board of directors and certificate holders, held on June 12, was addressed by Dr. Viktor O. Wilson, Director of the Minnesota Department of Health, University of Minnesota.

\* \* \*

According to Dr. Donald C. Smelzer, president of the American Hospital Association, the hospitals of this country supplied 4,000,000 more days of patient care in 1944 than in 1943. At the same time we had 60,000 doctors in the armed forces. The hospitals are contemplating adding 180,000 more beds in the near future to the present supply. Nurses are being trained in 1,435 schools of nursing, all located in hospitals.

#### AMERICAN COLLEGE OF CHEST PHYSICIANS

The Board of Examiners of the American College of Chest Physicians announce that the next written examination for Fellowship will be held at Chicago, June 16, 1945. Candidates for Fellowship in the College who plan on taking the examination should contact the Executive Secretary of the American College of Chest Physicians, 500 North Dearborn Street, Chicago 10, Illinois.



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# Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 28

July, 1945

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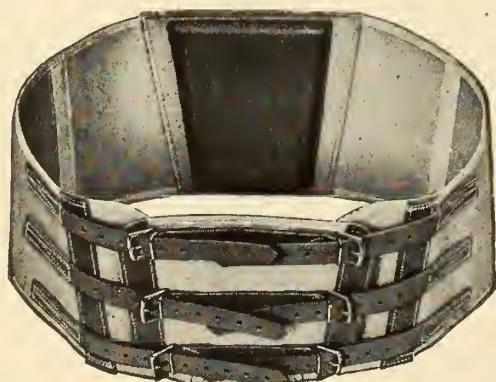
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# Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

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July, 1945

No. 7

## COMPLICATIONS IN THE URINARY TRACT DURING PREGNANCY

WILLIAM F. BRAASCH, M.D.

and

ROBERT D. MUSSEY, M.D.

Rochester, Minnesota

LESIONS in the urinary tract which complicate pregnancy include infection, pyelo-ureterectasis, vesical retention of urine and various surgical conditions, such as stones, hydronephrosis, tuberculosis and neoplasm. Some writers consider toxemia of pregnancy the result of a lesion of the urinary tract. The last, however, is debatable.

### Infection and Pyelo-ureterectasis

Infection of the urinary tract, although not a common complication of pregnancy, occurs often enough so that the attending physician always must be on the lookout for it. Unless the condition is recognized early, serious damage may result. In most cases the infection involves primarily the kidney and is confined largely to the renal pelvis. The condition usually is referred to as "pyelitis" rather than "pyelonephritis" even though the adjacent renal parenchyma also is involved. After delivery, infection may appear in the bladder that is overdistended by retention of urine.

Renal infection whether it occurs before, during or after delivery usually is the result of renal stasis and, as such, it would seem to be ascending in type rather than of hematogenic origin. Although opinions differ concerning the factors which produce renal stasis during pregnancy it is now generally believed that two fac-

tors are present. In the first place, some stasis is caused by the effect on the ureter of specific hormones secreted during pregnancy. As a result an adynamic pyelo-ureterectasis of moderate degree occurs which is associated with diminished peristaltic activity. In many cases, however, some and possibly a greater degree of stasis appears to be caused by pressure of the pregnant uterus on the ureter. The presence of a mechanical factor is supported by the following evidence: (1) the frequent occurrence of unilateral pyelo-ureterectasis during pregnancy; (2) the frequency with which a greater degree of stasis is found on one side (usually the right) even when the pyelo-ureterectasis is bilateral and (3) involvement of the upper portion of the ureter only, the lower third remaining normal.

*Urographic Data.*—Changes in the outline of the renal pelvis and ureter occurring during pregnancy may be visualized urographically. These changes are of clinical as well as anatomic interest. Pyelo-ureterectasis, in a variable degree, is present and can be demonstrated by excretory urograms in approximately 70 per cent of pregnant women. The degree of dilatation is moderate in many cases but in some it is extensive. Although it is bilateral in many cases, the right side is affected more often and to a greater degree than the left side (Fig. 1). The ureter usually is involved largely in the upper half or two-thirds of its course and is dilated to a comparatively great-

From the Section on Urology (Braasch) and the Section on Obstetrics and Gynecology, Mayo Clinic, Rochester, Minnesota.  
Read before the meeting of the South Dakota State Medical Association, Huron, South Dakota, May 22 and 23, 1944.

er degree than the pelvis (Fig. 2). In most cases the outline of the affected renal pelvis and ureter will recede to normal after delivery. When the infection is severe and has continued for several

kidney may be normal. Residual pyelo-ureterectasis sometimes has led to unnecessary surgical exploration and even nephrectomy. When unexplained pyelo-ureterectasis of this type is noted



Fig. 1. Unilateral pyelo-ureterectasis confined to right side. Outline of fetal head may be noted in bony pelvis.



Fig. 2. Ureterectasis grade 2, confined to the upper two-thirds of the right ureter; and right pyelectasis, grade 1; left renal pelvis is normal. Outline of fetal head is visible on right side.

months, however, localized cicatricial changes with atony in the wall of the pelvis and ureter will persist for several months and often the pyelo-ureterectasis becomes permanent. Strangely enough, the residual pyelo-ureterectasis usually causes no symptoms and does not prevent renal infection from disappearing spontaneously or from being eliminated by chemotherapy.

In the course of routine urographic studies made many years after delivery, it is not uncommon to discover a variable degree of pyelo-ureterectasis. Although this type of residual ureteropelvic deformity usually has no clinical significance, the symptoms which led to the urogram being made may be ascribed erroneously to a ureteral lesion if the etiologic factors are not appreciated. We have observed patients who have had the ureters dilated repeatedly on the assumption that the pyelo-ureterectasis, revealed in the urogram, was caused by stricture. In cases of residual pyelo-ureterectasis after pregnancy, however, no actual stricture of the ureter is present. On cystoscopic examination no obstruction is offered to the passage of a larger catheter into the ureter and if a delayed urogram is made it may not reveal any residual medium. The function of the

in the course of routine excretory urography, the possibility of a residual deformity from previous pyelitis of pregnancy must always be considered.

*Pyelitis of Pregnancy.*—In former years pyelitis of pregnancy was not recognized until symptoms, such as urinary frequency, dysuria, or malaise and fever, appeared. Pyelitis caused much concern because it often remained undiscovered until extensive renal damage had taken place. Since the advent of adequate prenatal examination and care and the early use of chemotherapy, the severe complications that formerly were observed seldom occur. Care of the pregnant woman entails frequent urinalysis and if the presence of pus is verified in the catheterized urine, treatment should be undertaken at once.

According to Randall<sup>5</sup>, in a series of 5,960 consecutive deliveries at the Mayo Clinic in fourteen years, pyelitis of pregnancy was noted in 117 cases (1.9 per cent). This condition seems to be somewhat more prevalent among primigravidae than among multigravidae. Renal pain and urinary frequency are uncommon. More often symptoms referable to the urinary tract are not

present. Unexplained fever and malaise may be the only signs of infection of the urinary tract. In the 117 cases of pyelitis of pregnancy, only limited evidence of increased hazard to the lives of the mother and child was noted if the complication received early attention. Because of the presence of pyelitis, labor was induced at or near term in seven cases (6 per cent). Most of these patients had advanced renal infection when they came to the clinic. One patient who had pyelonephritis of long standing and uremia died. This death, which resulted in a maternal mortality rate of 0.85 per cent, could have been prevented if the infection had been recognized earlier.

If examination of voided urine reveals the presence of pus or erythrocytes, a catheterized specimen of urine should be obtained. Vaginal secretions adjacent to the external meatus of the urethra may contain a variable amount of pus and erythrocytes which often are included in the voided urine. Examination of the catheterized urine should include not only determination of the presence of pus, blood, albumin and sugar, but also a search for bacteria. If urinary infection is present, the physician should have at least a superficial knowledge of the invading bacteria in order to administer proper treatment. Such knowledge can be obtained easily by Gram's method of staining the dried urinary sediment, a simple procedure that can be performed in any laboratory. Whether the bacilli or cocci are Gram-positive or Gram-negative makes considerable difference in the indications for treatment. In most cases a Gram-negative bacillus is found in the stained sediment, and on cultures, if made, it is usually identified as a member of the colon bacillus group. A mixed infection with several types of bacteria sometimes is discovered.

Infection with colon bacilli, when detected early, usually responds readily to chemotherapy. In fact, an increased intake of fluid alone often relieves early pyelitis of pregnancy. One of us (Mussey) long has recommended an intake of at least eight glasses of fluid daily (1,920 c.c.). Under this regimen the incidence of urinary infections is reduced to a remarkably low level. With the onset of infection an effort should be made to maintain the intake of fluid at 4,000 to 5,000 c.c. in twenty-four hours, provided the urinary output is adequate. If severe infection is present, solutions of 5 per cent glucose or physiologic saline should be given subcutaneously and intravenous-

ly, in addition to the fluid taken by mouth. The intravenous administration of fluid is most effective, since many pregnant women are nauseated and consequently are unable to take large amounts of fluid by mouth. However, intravenous administration of saline solution is contraindicated in the presence of hypertensive toxemia. If nausea is present, a sulfonamide compound also can be administered intravenously. Interruption of gestation is necessary only in cases of chronic pyelonephritis in which there is evidence of lowered renal function or persistent severe obstruction of the ureter.

When the forced fluids do not relieve an uncomplicated urinary infection, any of the sulfonamide compounds may be given. If Gram-negative bacilli are noted in the urine, sulfa drugs usually quickly control the infection. Of the various sulfonamide compounds, sulfathiazole is probably employed most frequently. In some cases sulfadiazine seems to cause less reaction and, more recently, sulfamerazine has been recommended because of its effectiveness in small doses. The amount of these drugs required for treatment of urinary infection is materially less than that required for treatment of systemic and pulmonary infections. As a rule, a dose of 2 gm. daily is sufficient and, after two days, this amount can be reduced to 1 gm. daily. The possibility of idiosyncrasy of the patient to sulfonamide compounds must be borne in mind and if a toxic reaction occurs, administration of the drug should be discontinued immediately.

When use of the sulfa drugs is contraindicated and diuresis fails to eliminate the infection, any of the various forms of mandelic acid, such as elixir of mandelic acid or calcium mandelate, may be tried. Acidification of the urine is an important factor in overcoming bacterial infection. A pH of 5.5 or less is desirable. There is one objection to the use of mandelic acid: namely, the necessity for limitation of the intake of fluid. If the infecting organism is the *Streptococcus faecalis*, mandelic acid, with acidification of the urine, often is the best and sometimes the only effective treatment. When mixed infection caused by bacteria of the colon bacilli group and *Streptococcus faecalis* is present, the administration of both a sulfonamide compound and mandelic acid may be necessary. The sulfonamides are given until the colon bacilli are eliminated and the mandelic preparations until the *Streptococcus faecalis*

disappears. In severe infections with streptococci, penicillin may be used. It will not be effective in the presence of infection caused by Gram-negative bacilli.

Before the advent of chemotherapy, the urologist often was called in consultation when a large amount of pus was found in the urine. When the infection would not respond to other forms of treatment, it often subsided after the introduction of ureteral catheters. Drainage of the urine retained in the dilated renal pelvis and lavage with mild antiseptic solutions frequently resulted in subsidence of infection. In severe cases it was necessary to allow the ureteral catheters to remain in place for several days and to undertake lavage of the renal pelvis. At present this treatment is seldom necessary. In fact, during the last two years it has been employed in only one case at the clinic.

The management of pyelitis of pregnancy is not completed on cessation of the acute attack. In some cases the infection persists for a number of weeks after subsidence of acute symptoms. Dilatation of the ureters, which persists throughout pregnancy and afterward, may predispose to recurrence of infection. The acute attack may recur during pregnancy and occasionally the infection is permanent, unless thorough and persistent treatment is undertaken. Repeated examinations of the urine should be made after the infection is controlled.

### Vesical Retention of Urine

The possible seriousness of postpartum retention of urine in the bladder is not fully appreciated. Difficulty in voiding urine immediately after parturition is a common complaint. There may be few or no subjective symptoms of urinary retention even when large amounts of residual urine are present. It is a question whether catheterization should be undertaken early or whether function of the bladder will return spontaneously after the development of sufficient intravesical pressure. Retention of urine prepares the way for bacterial invasion and the longer the retention continues the greater becomes the danger of infection. Catheterization should not be postponed longer than eight hours and it should be undertaken earlier if the patient complains. The patient often has no desire to void for twelve hours or more and, unless the output of urine is watched, retention may be overlooked. Some-

times the patient seems to void normally when actually only part of the content of the bladder is passed. The amount of urine retained often measures 1,200 or 1,300 c.c. According to Randall, catheterization after delivery was necessary for 124 (15 per cent) of 796 obstetric patients observed at the Mayo Clinic during 1943. Of this number, seventy-one patients were catheterized because of complete retention of urine; the amount retained averaged 1,300 c.c. or more. Incomplete emptying of the bladder may persist for several weeks after delivery. Unless the condition is recognized early and relieved, secondary infection often occurs. In most cases of retention, the function of the bladder is restored to normal after catheterization is performed at intervals of six hours for several days. Not infrequently a retention catheter is employed. The administration of sulfonamide compounds in small doses as a prophylactic measure may be of aid in preventing secondary infection.

### Surgical Conditions

Pathologic conditions of the urinary tract that were dormant prior to pregnancy sometimes suddenly become active and require surgical attention. Among such lesions, renal and ureteral stone, hydronephrosis, renal tuberculosis and neoplasm in the kidney or bladder have been observed at the clinic. When the complicating lesion becomes troublesome in the latter stages of pregnancy, postponement of surgical intervention until after delivery usually is advisable unless the condition is acute. Prior to the third trimester, pregnancy offers no serious obstacle to surgical intervention. Premature labor, however, is the most frequent complication of surgical intervention at any time during pregnancy.

If pyuria fails to clear up after treatment with forced fluids or chemotherapy, the presence of some complication must be suspected. In most cases the diagnosis can be inferred from roentgenographic studies, including ordinary roentgenograms and excretory urograms. The latter method of examination often reveals lesions in the urinary tract that would otherwise be overlooked; it could be employed more frequently by general practitioners. If necessary, cystoscopic examination may be performed. Such diagnostic procedures as cystoscopic examination and intravenous urographic examination rarely cause any trouble during pregnancy.

**Toxemia**

The exact relation of pyelitis to acute hypertensive toxemia of pregnancy has not been determined. However, according to most obstetricians (Mussey and Lovelady,<sup>2</sup> Baird,<sup>1</sup> Prather<sup>3</sup> and Prather and Sewall<sup>4</sup>), no definite evidence is available that pyelitis is a factor in acute toxemia of pregnancy. Baird found that when albuminuria and hypertension developed during pregnancy, pyelitis seldom was present. In other words, hypertension, which is the predominant finding in acute toxemia, rarely is found in association with uncomplicated pyelitis of pregnancy. A woman who has chronic renal disease and becomes pregnant, however, may exhibit an increase of renal symptoms and hypertension. Acute toxemia also may be superimposed on chronic vascular disease. In most cases of toxemia of pregnancy no urinary infection is found—but when it is present—it usually is of a chronic and long-standing type.

**Summary**

The best method of detecting early infection in the urinary tract during pregnancy is by routine examination of the urine at regular intervals. Examination of the urine should not be postponed until symptoms appear. If pus is discovered in the voided urine, a catheterized specimen should be obtained. Next, the type of bacteria present in the dried urinary sediment should be determined and appropriate chemotherapy should be advised. Large amounts of fluids should be given orally and, if necessary, intravenously. Several quarts of fluid (3,000 to 4,000 c.c.) may be taken daily by mouth. The early use of sulfonamide compounds permits small doses and results in lit-

tle reaction. The various forms of mandelic acid, with acidification of the urine, may be of value in eliminating certain types of infection. The administration of penicillin may be of value in some types of resistant infection.

The frequent occurrence of postpartum retention of urine should be kept in mind and if difficulty of urination or unexplained fever occurs after parturition, catheterization should be undertaken.

If pyuria persists, the possibility of some other complication, such as stones, hydronephrosis, tuberculosis or neoplasm, should be investigated. Roentgenograms and intravenous uograms are valuable diagnostic aids and, if necessary, cystoscopic examination should be undertaken.

Evidence indicates that acute uncomplicated pyelitis is not the etiologic factor in acute pre-eclamptic toxemia or eclampsia. Acute toxemia of pregnancy may be superimposed on chronic disease of the kidneys or vascular system.

Residual pyelo-ureterectasis may result from pyelitis of pregnancy. This often persists permanently and, when discovered in the course of urography, it may be erroneously regarded as a renal lesion causing the patient's symptoms. When unexplained pyelo-ureterectasis of this type is noted in the course of routine excretory urography, the possibility of a residual deformity from a previous pyelitis of pregnancy must always be considered.

**References**

1. Baird, D.: Quoted by Mussey, R. D., and Lovelady, S. B.
2. Mussey, R. D., and Lovelady, S. B.: Pyelitis of pregnancy and its management in 121 cases. *West. J. Surg.*, 48:591-596, (Oct.) 1940.
3. Prather, G. C.: Pyelonephritis of pregnancy. *J. Urol.*, 45:147-151, (Feb.) 1941.
4. Prather, G. C., and Sewall, Weston: Relation of pyelonephritis to toxemias of pregnancy. *Surg., Gynec. & Obst.*, 72:781-786, (Apr.) 1941.
5. Randall, L. M.: Personal communication to the authors.

**PLACENTA ACCRETA IN DUPLEX UTERUS FOUND AT CESAREAN SECTION**

**JAMES R. MANLEY, M.D.**

Duluth, Minnesota

**P**LACENTA Accreta means the abnormal attachment of the placenta to the uterine wall. It is due to the lack of decidua basalis which normally develops at the placental site and acts as a barrier to the erosive and penetrating action of the trophoblast. It is the presence of the de-

cidua basalis which allows the placenta to separate cleanly from the uterine wall during the contractions of the uterus following the expulsion of the child. Separation occurs through the substance or between the layers of the decidua. In the absence of the decidua the villi penetrate

deeply into the musculature and the placenta becomes firmly fixed to the uterine wall. It cannot be peeled off cleanly but can only be removed by tearing through the villi or uterine musculature.

Placenta increta means a very deep penetration of the villi into the muscle, while in placenta percreta, the perforation of the uterine muscle occurs. It is comparable to the condition found in the tubal pregnancy where there is a lack of decidua formation allowing for perforation of the tube by the growing trophoblast.

Placenta accreta is rather rare. Its incidence varies, according to different authors, from one in two thousand to one in six thousand cases; however, there are probably many partial cases which are never reported. Irving and Hertig made an exhaustive study of twenty cases and reported them in 1937. Albert Matthew reported eight cases found in the literature and one of his own of placenta accreta found after cesarean section. Feuhling of Cloquet recently reported a case in Duluth, Minnesota.

*Symptoms.*—Although it is extremely rare, placenta accreta should be thought of in any case in which the placenta cannot be expressed from the uterus in a reasonable time. The differential diagnosis should include retained placenta and simple adherent placenta. A retained and separated placenta is accompanied by bleeding. A simple adherent placenta may or may not bleed, depending upon the degree of partial separation. A typical complete placenta accreta usually does not bleed much unless attempts are made at manual removal. Partial accreta will bleed profusely. Diagnosis, however, is usually made during attempts at manual removal.

It is comparatively easy to find the line of cleavage in simple adherent placenta and to peel the placenta off the uterine wall. In placenta accreta no cleavage line is present and attempts to separate it cause profuse hemorrhage. The uterine wall is usually thinner than normal and persistence may result in perforation of the uterus. The treatment is supravaginal hysterectomy.

#### Case Report

This case is one of placenta accreta found in duplex uterus at Cesarean section. This patient, a primipara, aged twenty-seven, was seen in her first pregnancy in October, 1937, at about the sixth month of her preg-

nancy. History was negative except that she stated a tubal pregnancy had been diagnosed eighteen months previously during which she bled three weeks. No operation was performed, however, and she recovered spontaneously.

Examination showed two separate, normal appearing cervices with a complete vertical vaginal septum extending to the introitus, completely dividing the vagina. She was apparently pregnant in the left horn, and there was a firm mass in the cul de sac a little to the right, about the size of a lemon, which probably represented the nonpregnant uterus. Further examination was negative with the exception of a small pelvis of the generally contracted type.

Because of the uterine anomaly and the small pelvis, a Cesarean section was done at term and a normal convalescence occurred. She again became pregnant in 1940 and her confinement was due April 13, 1941. There was no indication of toxemia during this pregnancy.

On March 19, 1941, she came to the hospital complaining of moderate persistent painless vaginal bleeding, dark red in color. An x-ray of the abdomen was taken after filling the bladder with an opaque material and a diagnosis of placenta previa was made. Although the x-ray diagnosis is possibly not accurate with a double uterus, clinical symptoms were such as to substantiate a diagnosis of placenta previa. A transfusion was given and she was prepared for section.

*Operation.*—A midline incision was made below the umbilicus and the uterus walled off with gauze. It was covered with adhesions over the lower half. The uterus presented a very unusual appearance. It was distinctly bluish in color and apparently very thin walled. It appeared more like a large ovarian cyst with many large dilated veins coursing through the walls. It differed entirely from the usual appearance of a pregnant uterus at term. The upper part of the fundus had a more normal appearance. The abdominal incision was extended upward and the uterine incision was made high up and the baby extracted and the cord tied. The placental attachment was now explored. There was scarcely any uterine wall at the placental site, only a thin fibrous layer being present. The placenta covered the lower uterine segment in front and one edge covered the internal os.

It was impossible to find a cleavage line and separate the placenta from the uterus. It seemed to have invaded the uterine wall. The very thin wall of the uterus was torn while trying to remove the placenta and no contractions were present in spite of intravenous ergotrate and pituitrin. The hemorrhage became excessive and it was decided to remove the uterus. This was a double uterus and the nonpregnant horn, now about the size of a man's fist, somewhat altered the usual procedure. Amputation of the pregnant horn was done just above the junction of the two uteri. The bladder was attached to the uterus abnormally high due to the previous section which was of the low cervical type. There was a large amount of bleeding and during the operation the bladder was accidentally torn

into. A supravaginal hysterectomy of the pregnant uterus was completed, the bladder tear was repaired with chromic catgut and a mushroom catheter placed in the bladder. There was considerable oozing present throughout the operation but this was controlled fairly well. There was evidence of beginning shock and 700 c.c. of blood were given during the operation and the patient left the table in fairly good condition.

The patient made a very good recovery, the bladder repair healed satisfactorily, the retention catheter was removed on the fourteenth day, and the patient left the hospital two days later.

This patient now has a double vagina with a complete septum. One side of the vagina leads to the cervix of the amputated fundus on the left, and the other to the normally functioning fundus of the right side. She menstruates regularly and normally and has been in good health since the operation. She has a very satisfactory method of birth control due to this anomaly.

*Pathological Report*—The specimen consists of body of uterus which is still connected with the tube and ovary and which contains the placenta. The placenta is difficult to separate. On pulling on the placenta, the wall of the uterus, which is quite thin in places, tears partly away with the placenta. The tissue of the placenta is red and shows the usual spongy structure. The wall of the body of the uterus is very thin and measures in places not more than .3 cm. in thickness. In the

lateral part of the uterus the wall measures up to 2.5 cm. in thickness. The musculature of the uterus is edematous.

*Microscopic*—The villi of the placenta are of the usual size and are mostly lined with a well-preserved syncytium. The stroma of the villi is moderately cellular and shows a moderate number of blood vessels. The decidua is very thin in places; in other places no decidua can be demonstrated. The villi are in direct contact with the musculature of the uterus especially in the thinnest parts of the wall. The cells of the interstitial connective tissue of the musculature of the uterus are larger than usual.

*Diagnosis*.—Subtotal resection of the left fundi-uteri in a case of duplex uterus with pregnancy in the resected fundus, placenta accreta.

### Summary

A case of placenta accreta found in a case of duplex uterus at Cesarean section is presented with the pathologist's report of the uterus removed.

### References

- Irving, F. C. and Herbig, A. T.: Study of placenta accreta. *Surg., Gyn. & Obst.*, 64:178, 1937.
- Mathien, Albert: Placenta accreta found at cesarian section. *Am. J. Obst. & Gynec.*, 33:498, (March) 1937.

## A SURVEY OF LEPTOSPIROSIS (WEIL'S DISEASE) IN MINNESOTA

ABRAM B. STAVITSKY, M.S.P.H., Ph.D.\* and ROBERT G. GREEN, M.S., M.D.

Minneapolis, Minnesota

IN RECENT years it has become increasingly evident that leptospirosis icterohemorrhagica, or Weil's disease, is not so rare a disease in the United States as was formerly thought. Until 1941 there were about twenty-seven fully described and twenty presumptive human cases of the disease in the literature.<sup>2</sup> However, in that year Larson<sup>2</sup> listed fifty-one previously unreported cases occurring in the United States and Puerto Rico between 1938 and 1941. This brings to ninety-eight the number of human cases that have been observed in Puerto Rico, the District of Columbia, and fourteen states, every area of the country being represented. Recent surveys

of the animal population throughout the country<sup>4,6</sup> reveal that animals in the United States have about the same frequency of infection with a virulent strain of the spirochete as do animals in other parts of the world where the human disease is more common.<sup>1</sup>

Despite the apparent increase in the number of reported cases in man and animals throughout the country, there have as yet been no cases of the disease established in Minnesota.<sup>3,5</sup> It was therefore believed worth while to inquire into the presence or absence of the etiological agent of leptospirosis, *Leptospira icterohemorrhagiae*, in certain groups of the human and animal population in and around Minneapolis and Saint Paul. Three groups of the human population were included: clinically suspected luetics, confirmed

From the Department of Bacteriology and Immunology, University of Minnesota. A preliminary report of this work was given at a meeting of the North Central Branch of the Society of American Bacteriologists at Ames, Iowa, May 8, 1942.

\*Present address: School of Veterinary Medicine, University of Pennsylvania, Philadelphia, Pennsylvania.

## LEPTOSPIROSIS—STAVITSKY AND GREEN

TABLE I. SUMMARY OF SURVEY OF LEPTOSPIROSIS IN MINNESOTA

Source of Material	No. Examined	Method DF	of AGG	Diagnosis INOC	Positive DF	Results AGG INOC	Percent- age Positive
Human beings	196	196	196	50	0	0 0	0
Suspected cases of leptospirosis	4	4	4	4	0	0 0	0
Suspected cases of lues	143	143	143	26	0	0 0	0
Confirmed cases of lues	49	49	49	20	0	0 0	0
Dogs	20	20	20	10	0	3 0	15
Wild rats	22	22	0	4	4	0 4	18

DF—Dark-field microscopy.

AGG—Agglutination test.

INOC—Animal inoculation.

lucties, and individuals clinically suspected of having leptospirosis. The animals examined were wild rats and dogs. Samples of human whole blood, blood serum and urine were collected through the co-operation of the Dermatology and Syphilology Clinic and the Bacteriology Laboratory of the University Hospitals, Minneapolis. Blood, urine, kidney and liver were obtained from wild rats trapped at the Saint Paul city dump and from dogs used in experimental work by the Department of Surgery of the University of Minnesota. All samples were examined by direct dark-field microscopy for morphologically characteristic, actively motile spirochetes and were inoculated into young white guinea pigs. The microscopic agglutination test for the diagnosis of leptospirosis as described by Schuffner and Mochtar<sup>7</sup> was performed on all of the blood sera. Table I summarizes the results of these studies.

All tests on human material were negative. Evidence of present infection of four rats with actively virulent leptospirae was obtained by direct dark-field observation and animal inoculations of minced rat kidneys. The organisms isolated by culture of the infected kidneys of inoculated guinea pigs proved to be morphologically identical with and immunologically very similar to strains of the spirochete isolated in other parts of the country. Evidence of past infection of three dogs was secured by means of positive agglutination tests of their sera against *Leptospira icterohemorrhagiae* in significant titers of 1:300, 1:200 and 1:100. All other tests on the dogs were negative.

So far as we know, this is the first evidence of the presence of actively virulent *Leptospira*

*icterohemorrhagiae* in the animal population in Minnesota. Thus far we have not succeeded in procuring evidence of past or present human leptospiral infection in this area.<sup>3,5</sup> However, it seems logical to assume that human cases of Weil's disease might well occur in Minnesota inasmuch as there is an adequate animal reservoir for the spirochete in the rat, dog and possibly other animals. Moreover, the disease is readily transmissible by contact with or ingestion of moist soil and food contaminated with rat urine and feces. Sewer workers, fish cleaners, and workers in damp mines, ditches and tunnels would be particularly liable to infection.

It may be pointed out that only 50 per cent of the cases of Weil's disease present jaundice<sup>9</sup>, while a number of cases take the form of a relatively benign meningitis with none of the classical symptoms of leptospirosis other than a positive agglutination test.<sup>8</sup> In the latter type of case ordinary bacteriological studies usually fail to reveal the presence of the organism, as leptospirae do not grow on ordinary bacteriological media and are not stained by the more commonly used stains.

## Bibliography

- Kolle, W., Kraus, R., and Uhlenhuth, P.: Weilsche Krankheit. Handbuch der pathogenen Mikro-organismen, 7:487, 1930.
- Larson, C. L.: Weil's disease. A report of fifty-one cases occurring in Puerto Rico and the United States. Pub. Health Rep., 56:1650, 1941.
- McDaniel, Orianna: Minnesota Department of Health, Minneapolis. Personal Communication.
- Meyer, K. F., Stewart-Anderson, B., and Eddie, B.: Canine leptospirosis in U. S. J. Amer. Vet. M. A., 95:710, 1939.
- Packchanian, A.: Positive agglutination tests in suspected cases of Weil's disease. Pub. Health Rep., 56:2145, 1941.
- Raven, C.: Canine leptospirosis in Pennsylvania. J. Inf. Dis., 69:131, 1941.
- Schuffner, W., and Mochtar, A.: Microscopic agglutination test for diagnosis of leptospirosis. Cent. f. Bakt., originale I. Abt., 101:405, 1927.
- Troisier, J., and Boquién, Y.: La Spirochète Meninges. Paris: Masson et Cie, 1933.
- Walch-Sordrager, B.: Weil's disease. Bull. Health Organ. League of Nations, 8:143, 1939.

## ACUTE APPENDICITIS

### A Study of the Cases Admitted to the Minneapolis General Hospital Over a Five-Year Period

JOHN V. FARKAS, M.D.  
Minneapolis, Minnesota

THIS review of cases of acute appendicitis admitted to the Surgical Service of the Minneapolis General Hospital covers a recent period of five consecutive years.

The cases analyzed are limited to those which have definitely been proved by pathological examination, including microscopic sections, to have a diseased appendix as the offending organ of disease. The fifteen cases not operated upon were diagnosed as "Appendiceal abscess due to acute appendicitis with perforation." These cases were later re-admitted for an interval appendectomy, but the subsequent hospital admissions are not included in this study. Those patients clinically diagnosed as acute appendicitis but subsequently proved to have nonpathological appendices, as well as those from which normal appendices were removed for any reason, such as appendectomy concomitant with gynecological procedure, are not included in this group.

#### Incidence and Age

During this five-year period 665 cases were admitted. The extremes in age range are from two years (male, with a gangrenous appendix) to seventy-six years of age. The age distribution is represented in Chart 1.

Chart 1 clearly shows that appendicitis is a disease of youth, over 70 per cent of all cases occurring in the second and third decades of life.

TABLE I. SEX DISTRIBUTION

Decade	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	Total
Male	23	133	89	49	22	27	8	3	354
Female	25	163	84	21	10	4	4	0	311

#### Sex Distribution

Of the total number, 354 cases (53.2 per cent) were in males, while 311 cases (46.8 per cent) occurred in females. Although there were more

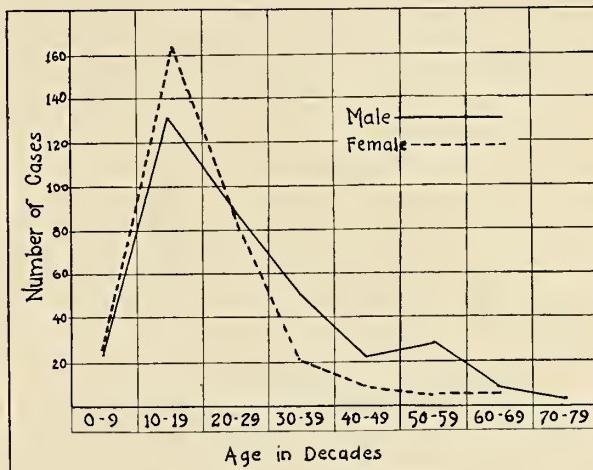


Chart 1.

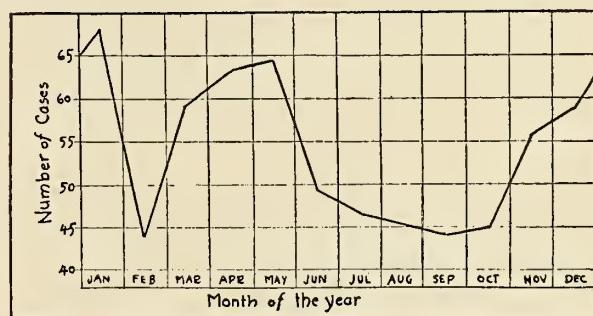


Chart 2.

cases in the entire group, numerically speaking, in males, there was a greater incidence of the disease in females in the earlier periods of life.

#### Seasonal Variation

The graph in Chart 2 shows two seasonal peaks, one occurring in midwinter and the other in midsummer. The significance of this curve is not readily apparent. There was no noticeable association between acute upper respiratory infections and acute appendicitis.

#### Duration of Symptoms

In 469 individuals found to have acutely inflamed appendices without perforation, the average duration of symptoms prior to admission to

From the Department of Surgery, Minneapolis General Hospital, Minneapolis, Minnesota. 1944.

the hospital was 25.6 hours. The time elapsing varied in extreme range from one and one-half hours to seventy-two hours. Patients found at operation to have perforated appendices gave histories of symptom-durations varying from two hours to ten days, an average of 49.05 hours.

In patients who, on initial examination at the time of admission, were found to have easily definable masses the average duration of symptoms was 6.4 days, varying in extremes from two days to seventeen days.

### Treatment

It is not the purpose of this review to discuss the relative merits of various methods of treatment of acute appendicitis. At this clinic, the sound adage "appendicitis is a surgical disease" is strictly followed.

Of the 665 cases herein considered, 648 were treated surgically. Of the seventeen patients not operated upon, fifteen were patients with large masses in the right lower abdominal quadrant and in whom bodily defense mechanisms seemed to be controlling the disease adequately. The remaining two were an eleven-year-old female who on admission was extremely ill, having a temperature orally of 104° F. and who expired on the third day of hospitalization, and a seventy-six-year-old male admitted in a moribund condition, expiring on the same day.

Appendectomy was performed in all but eight of the patients treated surgically. In those cases in which the appendix was not removed, a well-defined abscess was encountered and incision of the abscess was performed.

A muscle-splitting incision of the McBurney type was used in 524 of the 648 surgical cases. Rectus muscle incisions were utilized in 120 instances, seventy-nine of these being in females.

The stump of the appendix was inverted in less than half the cases. There was no apparent difference postoperatively between those cases in which the stump was inverted and those in which inversion of the stump was not performed.

In nearly all cases, including those complicated by perforation of the appendix, the wound was closed without the use of drains. Only those with abscess formation were closed with drainage. Peritonitis without abscess formation was not used as indication for drainage. In this group of cases, sulfonamides orally or intravenously were administered postoperatively in full therapeutic doses.

Sulfonamides sprinkled intraperitoneally were used uncommonly and never in amounts to exceed five grams. No cases of jaundice were noted in those which were treated with intraperitoneal sulfonamide drugs.

In many cases, peritonitis, as diagnosed clinically, was not confirmed at surgery, although in no case were clinical signs of peritonitis absent when peritonitis was observed at operation.

The use of morphine sulfate administered subcutaneously prior to surgery was a helpful aid in more clearly interpreting the true pathological state by eliminating voluntary muscle spasm.

### Anesthesia

Spinal anesthesia was the method of choice. Of the 395 cases of anesthesia via the spinal route, the usual agents employed were procaine crystals dissolved in spinal fluid, metycaine solution, and 4 per cent solution of pontocaine snow (dissolved in three per cent solution of glucose in triple distilled water). The spinal method was used for anesthesia in seventy-one patients between fourteen and seventeen years of age, in those who were emotionally stable enough to co-operate. The results obtained in those younger individuals were excellent.

In a few instances it was necessary to control apprehension during the operative procedures by means of supplementary light general anesthetics. For this purpose a small amount of sodium pentothal administered intravenously or nitrous oxide by inhalation were found to be the adjuncts of preference. Nausea alone during operation was combatted successfully almost invariably by the administration of pure oxygen inhalation for a few minutes at a time.

General anesthesia was employed in 248 cases: ether by inhalation, preferably by the open method for children; cyclopropane and ethylene-ether-oxygen in most instances, for adults.

Local infiltration of 1 per cent procaine solution was used for anesthesia in five cases including an eleven-year-old female suffering from an associated upper respiratory infection, and a sixty-nine-year-old male with advanced generalized arteriosclerosis.

### Hospitalization Time

It is interesting to compare the duration of hospital days required for the different types of incisions for appendectomy. In cases uncomplicated by perforations of the appendix or by post-

TABLE II. HOSPITALIZATION TIME

Type	Average number of hospital days
Non-perforated	McBurney incision
	Rectus incision
Perforated	19.4

operative complicating circumstances, the hospitalization duration for cases in which the McBurney type of incision was used averaged 7.3 days; those individuals in whom a rectus type of incision was performed required an average of 11.3 days hospitalization.

Patients whose courses were complicated by perforation of the appendix (including those with abscesses treated conservatively) necessitated an average period of hospitalization of 19.4 days.

### Pathology

In this series all of the cases in which the appendices were removed, the specimens were examined grossly and microscopically by the hospital staff pathologists. Cases reported by the pathologist as "interval appendix," "subsiding appendicitis," "peri-appendicitis" or similar diagnoses are not included here. This survey includes only those cases which were diagnosed pathologically as "acute suppurative appendicitis," "gangrenous appendicitis," and "gangrenous appendicitis with perforation."

Abscess formation in cases complicated by perforation numbered forty-seven, the abscesses varying in size from small abscesses at the site of perforation to large palpable masses containing several ounces of pus. In two cases there were multiple small abscesses involving the omentum.

In 194 instances (including the eight cases of abscesses not operated upon) there was evidence of perforation. This seems to be an alarmingly high figure of 29.1 per cent of the total number of cases included in this discussion. But when it is reflected that the average duration of symptoms of patients with perforated appendices was longer than forty-nine hours before seeking medical attention, then it is readily conceivable why there should be a relatively high incidence of perforations in diseased appendices in patients of the class usually seen in institutions such as this.

Despite the fact that there were a comparatively large number of perforations, severe perito-

TABLE III. POSTOPERATIVE DEATHS

Case	Sex	Age	Days Postoperative	Diagnosis
1	M	2½	8	Acute appendicitis, perforated, Generalized peritonitis Pneumonia
2	F	12	16	Perforated acute appendicitis Generalized peritonitis Bronchopneumonia
3	M	15	2	Perforated gangrenous appendicitis Generalized peritonitis
4	F	15	10	Perforated gangrenous appendicitis Generalized peritonitis
5	M	21	12	Perforated acute appendicitis Generalized peritonitis
6	M	58	4	Perforated gangrenous appendicitis Generalized peritonitis Pneumonia
7	M	74	4	Perforated gangrenous appendicitis Generalized peritonitis Pneumonia
8	M	26	13	Gas gangrene of abdominal wall Perforated gangrenous appendicitis Generalized peritonitis
9	M	74	4	Pneumonia Generalized peritonitis Acute suppurative appendicitis with perforation
10	F	21	8	Pulmonary embolism Acute suppurative appendicitis
11	M	27	Died suddenly during operation	Acute suppurative myocarditis Acute suppurative appendicitis

nitis was noted in only a few cases. In many instances it was surprising to find the peritoneum normal in appearance when clinically peritonitis was strongly suspected.

### Bacteriology

Cultures for bacteriological study were made in fifty-three instances of appendicitis associated with peritonitis due to perforation of the appendix. Of this number, forty-five were positive for bacterial growth and nine were negative. In eighty cases cultures were obtained from the peritoneal contents of those patients with clinical signs of peritonitis, but in whom no perforation of the appendix was found at operation. Of these, sixty-six were negative and only fourteen were positive for bacterial growth. In both groups the organisms cultured were the usual inhabitants of the intestinal tract, with *E. Communis*, *E. communior*, and nonhemolytic streptococci predominating.

### Mortality

There were thirteen deaths in the entire series; eleven of them were postoperative. This gives a mortality rate of 1.94 per cent for the entire group and a rate of 1.65 per cent for the postoperative deaths.

### Nonsurgical Deaths

1. An eleven-year-old female admitted in a severely acutely ill condition with a temperature of 104° F. died on the third hospital day. Autopsy revealed a perforated gangrenous appendix with generalized peritonitis.

2. A seventy-six-year-old male admitted in a moribund condition; death occurred on the same day. Autopsy revealed a perforated gangrenous appendix with generalized peritonitis.

### Postoperative Deaths

In the postoperative deaths, all except two were in cases having perforated acutely infected appendices and generalized peritonitis.

### Complications

Postoperative complications other than urinary retention included the following:

1. Pulmonary atelectasis. Two cases, both males, aged thirty-five and forty-eight years. Both patients had received general anesthetics.

2. Subphrenic abscess. One case, male, aged twenty-three; drainage of abscess surgically.

3. Wound infections. Subcutaneous abscesses (in other than patients with wounds closed with drainage tubes). Twelve cases.

4. Postoperative wound evisceration. One case, male, aged sixty-nine years, following appendectomy through a rectus incision; sutured darily sutured.

5. Large pelvic abscess. One case, female fifteen years of age, following removal of a perforated gangrenous appendix.

In addition, there were other complications no postoperative, such as:

*Acute appendicitis complicating pregnancy.*—Two cases, patients aged twenty-one and twenty-three years. Uneventful courses.

*Acute appendicitis complicating puerperium.*—One case, patient aged thirty-two, two weeks postpartum. Uneventful convalescence.

*Meckel's diverticula.*—Two cases, both adult males. Removal of noninfected appendix in each case.

There were no deaths in this group.

### Conclusion

This study is respectfully submitted with the intent, not to present uninteresting tables and collections of monotonous statistics, but to endeavor to present concise summaries of various aspects in the little-understood disease of appendicitis which still claims a grim toll of many thousands of lives each year.

## PULMONARY METASTASIS OF CARCINOMA DIAGNOSED BY BRONCHOSCOPY

WILLIAM S. TINNEY, M.D. and JOHN R. McDONALD, M.D.  
Rochester, Minnesota

THE lungs are frequently the site of metastatic lesions from malignant tumors arising elsewhere in the body. Usually the metastatic nodules produce multiple, well-defined lesions in the parenchyma of the lung and rarely give rise to pulmonary symptoms unless there is extension to the pleura with development of pleural effusion. In the absence of any demonstrable primary tumor, it occasionally may be difficult to distinguish these secondary lesions from primary bronchiogenic carcinoma situated in the periphery of the lung. In recent years, thoracic surgery has developed so rapidly that it has be-

come relatively safe to perform pneumonectomy for the removal of primary tumors of the lung. It is, therefore, essential that primary tumor be distinguished from secondary tumors of the lung. The most important criterion for such differentiation is the presence or absence of bronchial obstruction. However, the belief that metastatic pulmonary lesions never involve the bronchi is erroneous. Large metastatic tumor in the parenchyma of the lung may extend directly into the wall of a bronchus and ulcerate through the mucosa or the bronchial mucosa may be the site of direct metastasis. In either case the intrabronchial lesion may become large enough to obstruct completely the bronchus an-

From the Division of Medicine (Tinney) and the Division of Surgical Pathology (McDonald), Mayo Clinic, Rochester, Minnesota.

use atelectasis of that portion of the lung distal to the obstruction. As a result, the clinical signs and symptoms and the roentgenographic findings may be indistinguishable from those produced by primary bronchiogenic carcinoma.

Weiss has discussed the differential diagnosis of primary and secondary carcinoma of the bronchi. Many of the reports in the literature of secondary malignant lesions in the bronchi have been of cases of hypernephroma. Vinson and Martin reported a case of hypernephroma with pulmonary metastasis in which the diagnosis was made on bronchoscopic examination. In Clerf's case of melanoma a large growth in the left bronchus and trachea was removed bronchoscopically. Farrell observed that occlusion of the bronchus by a metastatic lesion on the wall was uncommon. In one of his cases the lesion was secondary to a melanoma. Maytum and Vinson reported a case of hypernephroma with pulmonary metastasis and ulceration into a bronchus, in which the pulmonary lesion simulated primary carcinoma of the bronchus. Barney and Churchill reported a case of adenocarcinoma of the kidney with metastasis to the lung. Nephrectomy and later lobectomy were performed and the patient was living and well five years after the lobectomy. In Bosse's case of teratoma of the testis, several small metastatic nodules were found to encroach on the lumen of the right main bronchus. Betts obtained tissue for biopsy through the bronchoscope in two cases in which the tumors were not bronchiogenic in origin. One was lymphoma. The second was a metastatic implant from a melano-epithelioma of the eyelid. Bain reported a case in which right pneumonectomy was performed for an intrathoracic tumor nine months after resection of carcinoma of the sigmoid. The tumor of the lung was found to be a metastatic lesion. Freedlander and Greenfield reported two cases in which metastatic tumors invaded the bronchi; the presenting symptom in these cases as in primary bronchiogenic carcinoma was hemoptysis. In both cases the diagnosis of carcinoma was made by biopsy of tissue obtained bronchoscopically. King and Caseman studied 109 cases of metastatic carcinoma of the lung and found that in twenty cases infiltration of the bronchial wall or mucosa had occurred.

We are presenting three cases of carcinoma

in which a metastatic lesion involved the mucosa of the tracheobronchial tree. None of these cases has been reported previously.



Fig. 1 (Case 1). Papillary adenocarcinoma: *a*, of the thyroid gland; the papillae are evident ( $\times 100$ ); *b*, of the trachea; the papillary nature of the lesion is similar to that shown in *a* ( $\times 130$ ).

### Report of Cases

*Case 1.*—A man, sixty-four years of age, came to the Mayo Clinic in August, 1938, because of a sensation of pressure in his throat and difficulty in breathing. These symptoms had started four weeks previously. On physical examination at the clinic a firm, nodular enlargement of the thyroid was found and cyanosis of the face, stridor and a nonproductive cough were noted. Partial thyroidectomy was performed for an extensive carcinoma of the thyroid. The carcinoma measured 7 by 4 by 2.5 cm. The external surface of the thyroid appeared somewhat nodular. On the cut surface, no definite adenomas were apparent and the entire thyroid was grayish in color. There were a few areas of brownish discoloration suggestive of old hemorrhage. The surface was friable and appeared moth-eaten. Histologically, typical papillary adenocarcinoma, grade 1 (Fig. 1*a*), was present. The epithelial cells were arranged on connective tissue stalks. An occasional mitotic figure was seen. There was invasion of the veins. Following thyroidectomy, the lesion was treated with radium.

The patient's course was satisfactory until May, 1940, when hemoptysis and dyspnea developed. On bronchoscopic examination a small nodular lesion was

## PULMONARY METASTASIS OF CARCINOMA—TINNEY AND McDONALD

found on the anterolateral wall of the upper third of the trachea. Histologic examination of tissue from this lesion showed it to be a papillary adenocarcinoma,

the skin. Radical mastectomy was performed. The pathologist found, 3 cm. from the nipple, a round nonencapsulated mass which on section was whitish

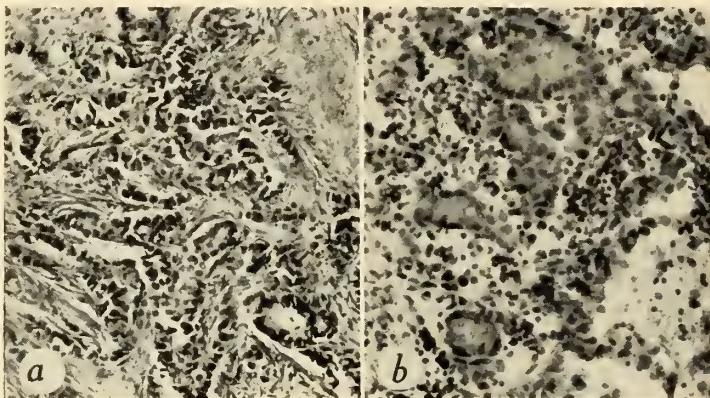


Fig. 2 (Case 2). Fibrous adenocarcinoma: *a*, of the breast ( $\times 95$ ); *b*, of the bronchus ( $\times 155$ ).

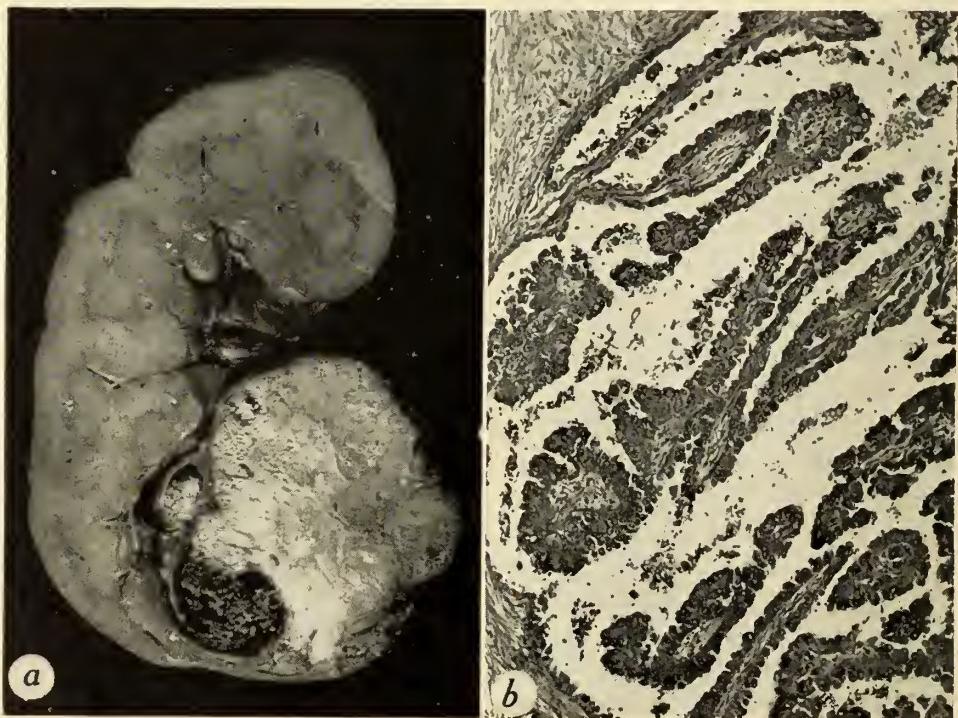


Fig. 3 (Case 3). Hypernephroma of kidney: *a*, specimen, *b*, a papillary type carcinoma is evident ( $\times 70$ ).  
evident ( $\times 70$ ).

grade 1. The morphologic features of this carcinoma were identical to those demonstrated in the thyroid (Fig. 1*b*).

**Case 2**.—A woman, sixty-four years of age, came to the Mayo Clinic in November, 1938, because of a mass in the left breast. She had noticed the mass four months before admission and during this time it had become larger. The tumor was found to be attached to

and firm. Microscopic examination revealed fibrous adenocarcinoma, grade 3 (Fig. 2*a*). The cells were forming a few acini but for the most part were fairly anaplastic.

The patient remained asymptomatic until November, 1941, when she noticed a sensation of tightness in the left side of the thorax, a nonproductive cough and wheezing. At bronchoscopy the left lower lobe bronchus was narrowed. Examination of tissue removed from

is bronchus revealed adenocarcinoma, grade 3 (Fig. 3), which was similar in appearance to the carcinoma which had been found in the breast.

the major bronchi and vessels of this left lung, was a grayish tumor mass measuring 5.5 by 4 by 3.5 cm. (Fig. 4a). There was involvement of the peribronchial lymph

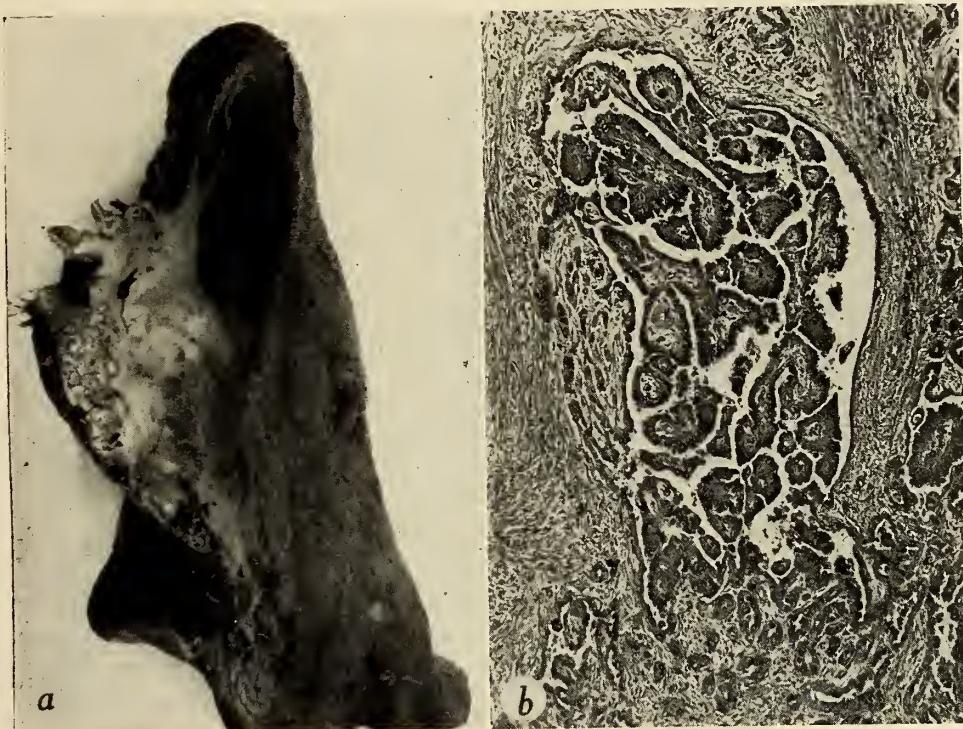


Fig. 4 (Case 3). Metastatic hypernephroma of the lung: *a*, the carcinoma involves the larger bronchi; *b*, the configuration of the tumor cells is identical with that of the lesion in the kidney (Fig. 3;  $\times 60$ ).

**Case 3.**—A woman, thirty-nine years of age, was admitted to the Mayo Clinic in July, 1938, because of hematuria which she had noticed for nine months. An excretory urogram revealed a filling defect in the pelvis of the right kidney with apparent cortical necrosis. Clinical diagnosis of neoplasm in the right kidney was made and right nephrectomy was performed. Situated in the lower pole of the right kidney was a grayish tumor measuring 6 cm. in diameter. There was tumor thrombosis of the renal vein in the hilus of the right kidney (Fig. 3a). Histologic examination revealed hypernephroma. The neoplastic cells were, for the most part, dark staining; a few clear or lipid-filled cells were present, however. The neoplastic cells were grouped in the form of papillae with a connective tissue stalk (Fig. 3b). About 30 per cent of the renal substance was destroyed and a small vein was involved.

The patient remained asymptomatic until July, 1940, when pain in the right thorax, progressive nocturnal dyspnea, cough and hemoptysis developed. On bronchoscopic examination a large tumor was found in the left upper lobe bronchus. Biopsy of this lesion revealed hypernephroma which demonstrated similar morphologic characteristics to those seen in the kidney. Left pneumonectomy was performed. Surrounding all

nodes. The entire lung showed marked atelectasis. Microscopically, this neoplasm was composed of hyperchromic cells arranged in a separate formation similar to that seen in the kidney (Fig. 4b). The patient was last seen at the clinic in November, 1944, at which time there was no evidence of further metastasis or of recurrence of the tumor.

### Comment

Three cases have been described in which a metastatic lesion ulcerated through some portion of the tracheobronchial mucosa. Case 1 is probably an example of direct invasion of the trachea by carcinoma of the thyroid. Case 2 is an example of carcinoma of the breast with metastasis to the bronchial mucosa. Case 3 is the most interesting one in this series. The metastatic lesion in the lung was diagnosed two years after nephrectomy for hypernephroma. There was no evidence of recurrence or metastasis four years after pneumonectomy for the metastatic tumor. In all of our cases, metastasis to the tracheobronchial tree was diagnosed on bronchoscopic examination and

## MULTIPLE MALIGNANT ARGENTAFFIN TUMORS—WATZ

biopsy of tissue obtained bronchoscopically confirmed the diagnosis.

### References

1. Barney, J. D. and Churchill, E. J.: Adenocarcinoma of the kidney with metastasis to the lung; cured by nephrectomy and lobectomy. *J. Urol.*, 42:269-276, (Sept.) 1939.
2. Betts, R. H.: Carcinoma of the lung; bronchoscopic aspects. *New England J. Med.*, 225:519-525, (Oct. 2) 1941.
3. Bosse, M. D.: Rhabdomyosarcomatous pulmonary metastases from a teratoma testis. *Am. J. Cancer*, 39:343-346, (July) 1940.
4. Clerf, L. H.: Melanoma of bronchus: metastasis simulating bronchogenic neoplasm. *Ann. Otol., Rhin. & Laryng.*, 43:887-891, (Sept.) 1934.
5. Farrell, J. T.: Pulmonary metastasis: a pathologic, clinical, roentgenologic study based on 78 cases seen at necropsy. *Radiology*, 24:444-451, (Apr.) 1935.
6. Freedlander, S. O. and Greenfield, Jack: Hemoptysis metastatic tumors of the lung simulating bronchiogenic carcinoma; a report of two cases. *J. Thoracic Surg.*, 12:109-116, (Dec.) 1942.
7. King, D. S. and Castleman, Benjamin: Bronchial involvement in metastatic pulmonary malignancy. *J. Thorac. Surg.*, 12:305-315, (Apr.) 1943.
8. Maytum, C. K. and Vinson, P. P.: Pulmonary metastasis from hypernephroma, with ulceration into a bronchus simulating primary bronchial carcinoma; report of a case. *Arch. Otolaryng.*, 23:101-104, (Jan.) 1936.
9. Raine, Forrester: Metastatic carcinoma of the lung invading and obstructing a bronchus. *J. Thoracic Surg.*, 11:216-218, (Dec.) 1941.
10. Vinson, P. P. and Martin, W. J.: Pulmonary metastasis from hypernephroma diagnosed by bronchoscopy. *Arch. Otolaryng.*, 15:368-370, (Mar.) 1932.
11. Weiss, Edward: The differential diagnosis of primary or secondary carcinoma of the bronchi. *Am. J. M. Sc.*, 17:487-494, (Apr.) 1929.

## MULTIPLE MALIGNANT ARGENTAFFIN (OR CARCINOID) TUMORS OF THE SMALL BOWEL WITH DISSEMINATED METASTASIS

C. E. WATZ, M.D.

Saint Paul, Minnesota

CARCINOID tumors arise from the Kultschitzky or argentaffin cells of the crypts of Lieberkühn. These cells are found throughout the gastro-intestinal tract but are more abundant in the appendix and terminal ileum. They are called argentaffin cells because of their ability to reduce solutions of ammoniacal silver.

Carcinoids were first described by Lubarsch in 1888. Only recently has it been recognized that this tumor may produce clinical symptoms and assume all the properties of malignant growths. Carcinoids represent 23 per cent of all malignant neoplasms of the small bowel.

Prior to 1930, 104 cases of carcinoid of the small intestine had been reported. Cooke added eleven cases to this, and from 1930 to 1939, Ariel reviewed the literature and collected 111 more cases which with his own brought the number to 237. Obstruction was the most common finding, occurring in 24 per cent of the 237 cases. From 1906 to 1943, the Mayo Clinic reviewed 130 small bowel tumors. Of these, thirty were carcinoids.

The prognosis is better than in adenocarcinoma. They are slow in evolution with usually a long pre- and postoperative phase and a surprisingly long survival. In eleven cases at the Mayo Clinic, deaths occurred from local recurrences and metastasis two and five years after operation, the remaining nine being well after ten to nineteen years. It appears that even liver metastases remain stationary for years after removal of the primary growth. Cameron stated that no less

than 33 per cent are alive eight years after operation for metastasizing carcinoid. Simple palliative ileo-colostomy for relief of obstruction without removal of the growth may allow the patient to live for years in comfort. In some cases spontaneous perforation proximal to the obstructing carcinoid has been recorded. The age of incidence is thirty-nine to seventy-eight, with an average of fifty-eight.

The history in these cases is usually that of a chronic intestinal obstruction with vague, periodic, intermittent, epigastric distress, at times with constipation or loose stools. In some, a mass is felt. Tarry stools or occult blood are not usually seen. Anemia is not usually present: In many reported cases, carcinoid was unexpectedly found at operation or at autopsy.

The pathologic report is usually adenocarcinoma of the carcinoid type. These tumors may be related to basal cell carcinomas. Mitotic figures are only rarely seen; grossly they are yellow but are often orange in color and are multiple. In a review of 152 cases by Humphreys, 30 per cent were multiple, and the tumor nodules numbered from two to ten. In the appendix, lesions are usually solitary.

Metastases are present in 25 to 43 per cent of the cases and spread, as do ordinary carcinomas, through the lymphatics. In some cases invasion of veins has occurred. Metastases usually occur in the regional lymph nodes, mesenteric fat and the liver. In recent reported cases more distant metastases have not been present.

These tumors occur five times as often in the appendix as the ileum. They are more rarely found in the colon, stomach, duodenum or jejunum and rectum. In routine appendectomies it was revealed that approximately one in 200 to 500 appendices has carcinoid present.

### Case Report

On May 6, 1944, I saw a fifty-three-year-old female with a three months' history of epigastric pain, spells of vomiting, diarrhea, weakness, 33-pound weight loss and a large subcutaneous mass just above the left posterior iliac crest. The mass was firm and fixed and measured about 4 by 3 inches and was raised about one inch from the surface of the flank. About the time of admission to the hospital, May 10, 1944, two other subcutaneous tumors had appeared. Tarry stools were noted only twice. Urinalysis was normal, hemoglobin 5 Gm., sedimentation rate 65 mm. in one hour, white blood count 12,200. Stools were 4 plus for occult blood on two occasions.

Examination revealed an emaciated, pale, white female with a complaint of abdominal distress. No masses were felt. Loud intestinal borborygmi were easily heard, and at times could be heard without the aid of the stethoscope.

X-ray studies by Dr. J. Richards Aurelius, Roentgenologist of the Midway Hospital, revealed the following:

"Abdomen: Plain film of the abdomen shows small amounts of gas in the left midabdomen which are evidently in the small bowel and may indicate jejunal stasis. This lies in the area of a rounded soft tissue mass of about 10 cms. in diameter seen slightly above the crest of the left ileum. The kidney shadows appear to be normal in size, with the left kidney normal in position. The right kidney is moderately low. Multiple faceted stones which are evidently in the gall bladder are seen lying to the right of the third, fourth and fifth lumbar vertebrae. The psoas muscle shows normal definition on the left and is probably obscured on the right by the kidney and gall-bladder shadows. Barium enema study: Barium enema study shows a negative colon and terminal ileum. There is no evidence of association of the colon with the mass in the left flank. A localized collection of gas is again demonstrated in apparently the jejunum at the level of this mass and suggesting stasis."

The patient was seen by Dr. N. Logan Leven, and I include his consultation note, dated May 13, 1944:

"Mass in left lumbar region probably is fibrosarcoma or some type of malignant tumor."

"Cannot say what the lesion is in the small bowel, but believe there are intra-abdominal metastases."

"Would suggest excision of lesion in the left lumbar region. This might clear up diagnosis and rule out further surgery. If not, an exploration of the abdomen is indicated, but probably will show a lesion too widespread to help."

The flank tumor was removed, and a diagnosis of adenocarcinoma of the carcinoid type was made.

After three transfusions, the abdomen was opened

through a left upper mid-rectus incision, May 22, 1944. Four tumors of the upper jejunum were found. The most proximal one involved in an intussusception was reduced. The involved bowel was then excised making an end-to-end anastomosis. Many large metastatic glands of the regional mesentery were excised with the involved bowel. There was no evidence of other abdominal extension or liver metastasis and no evidence of other small bowel tumors on examination.

The postoperative course was uneventful. There was persistence of loose stools, weakness and pallor. The patient was now able to eat better, although she had some vomiting spells and had the appearance of a malignant cachexia. It was of interest that the remaining subcutaneous tumors seemed smaller than they were before operation.

The patient was discharged from the hospital on June 3, 1944, twelve days after operation. Three weeks later, she returned to the hospital, and on this admission she had a complete small bowel obstruction and a hemoglobin of 6 Gm. A tentative diagnosis of small bowel obstruction due to adhesions was made. Nasal suction for decompression of the small bowel was done. The abdomen was reopened on June 26, 1944, at which time a small bowel tumor six feet from the ileocecal valve had become involved in an intussusception. This bowel was resected and section revealed another small bowel tumor of the carcinoid type. Eighteen days later the patient was discharged from the hospital. She returned to her home in the country.

Dr. J. Halpin, Rush City, Minnesota, her family physician, reported to me that she had developed a tumor in the left axilla. Another mass appeared over the right shoulder, and by August 23, 1944, three months after the first abdominal operation, a large mass had appeared in the left abdomen (apparently a recurrence in the jejunal mesentery or liver metastasis). Progress was downhill, and the patient died of cachexia, October 15, 1944, or eight months after onset of symptoms. Autopsy was not granted.

### Summary

A case of multiple malignant tumors of the small bowel with intussusception and obstruction, with metastases to regional lymph nodes, left axilla, right shoulder (subcutaneous region) and left flank (subcutaneously) is reported. There were no gross liver metastases or other abdominal metastases at the time of the laparotomy. Three subcutaneous tumors associated with the present illness appeared. The largest of the three was removed, with a microscopic diagnosis of metastatic carcinoid, identical with that of the jejunal new growths. Microscopic section first made was diagnosed adenocarcinoma and later diagnosed by the pathologist as adenocarcinoma of the carcinoid type.

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# CLINICAL-PATHOLOGICAL CONFERENCES

## TUMORS OF THE BREAST

E. T. BELL, M.D.

Saint Paul, Minnesota

DR. BELL: I want to talk to you on the tumors of the breast. This topic is almost as inclusive as diseases of the breast because almost all diseases of the breast appear as a tumor or, at least, as an indurated mass in the breast. I used to teach the diseases of the breast to medical students on the basis of carcinoma, adenocarcinoma, et cetera, but some years ago, when I took part in a tumor clinic it dawned on me that the one way to approach this subject is from the standpoint of the patient. The presenting symptom is a mass in the breast. We study the clinical features of the mass and then determine how to proceed to an accurate diagnosis.

First, I wish to speak about the normal breast. A breast of a young girl before puberty is small. It has not undergone puberty hypertrophy. It consists of just a few large ducts. As you look at the microscopic sections, you would hardly be able to recognize it as a breast. Before puberty, we have nothing but ducts. No acini have formed. A senile breast in a woman many years past the menopause may not be fatty, but shrunken and fibrous. The acini are few and atrophic. A breast of late pregnancy has very large lobules with large ducts going to the lobules. The one thing I want to stress is that benign tumors in the breast retain a lobular arrangement. This is the most important feature of benign tumors. Malignant ones lose their lobular arrangement. If you take the breast between your fingers, it feels lumpy. If you feel it with the flat of the hand it does not feel lumpy. In a high-power view of a small lobule, milk is seen being formed in the epithelium of the breast. A breast of lactation looks like a lung microscopically. You can see the droplets of milk in the cells. The pathologist has to be familiar with this in studying breast disease. Uneven atrophy of a breast after pregnancy and lactation is a thing of considerable importance in diagnosis. After the end of lactation, the breast recedes to the resting stage and often does it unevenly. An uneven retrogression produces a lumpy breast. Still you can avoid mistakes by using the flat of the hand, but if you pick it up you can easily feel masses. Uneven atrophy is apt to occur after repeated pregnancies.

In the diagnosis of breast tumors, the clinical approach is, I think, much better than the approach through the study of types of diseases which pathologists recognize. The first thing to impress on anyone who is not familiar with this is that on examining the breast one

must use the flat of the hand and not pick up the breast between the fingers. What you can pick up between your fingers is not a tumor unless you can feel it with the flat of the hand. Either use the flat of the hand to find lumps after inspection or use the tips of the fingers, but you must not pick up the lump to determine whether it is a tumor.

The most common tumor in the breast is a single, well-defined mass, felt with the flat of the hand. The most common form is one lump in one breast. The next point is whether or not it is adherent to the skin. All of you know how that can be demonstrated. Often you can see the dimpling of the skin. It is demonstrated by pushing the skin on either side with the tumor in the center and making the lump slip backward and as it pulls the skin with it, it causes the dimpling. If you can show that the lump is adherent there are ninety-nine chances out of one hundred that it is scirrhouus carcinoma, and one chance in one hundred that it is benign. After you have demonstrated that it is an adherent mass in the breast (some are not adherent to the skin but to the deep fascia), you do not make very many mistakes, if you do a radical mastectomy. You would occasionally be wrong. It might be fat necrosis, but in that case it would be small, superficial and adherent to the skin. Tuberculosis of the breast may be adherent, but tuberculosis is very rare in the breast. Tubercles containing giant cells and epithelioid cells are found in the breast in mastitis due to milk escaping from the ducts into the breast. In some cases of mastitis, the breast is adherent to the skin, but this is very unusual. If one wants to be 100 per cent safe, he should remove the lump, cut in with a knife and examine. Scirrhouus carcinoma, ninety times out of one hundred, can be recognized grossly.

I remember an interesting case of a woman who had an adherent mass in her breast which the surgeon thought was carcinoma, and I thought it was carcinoma, also, and advised radical mastectomy. The woman objected. She had a sister who had a similar mass removed which proved to be a mastitis. Since the patient insisted, the surgeon took out the lump and it proved to be mastitis and not carcinoma. She was saved from a radical mastectomy by her own insistence. If the lump is not adherent, the chances are about even that it is benign. The younger the woman the less chance that it is malignant. A lump in the breast of a woman under twenty-five is very likely a benign tumor. A tumor in a large breast and well away from the skin may be a scirrhouus carcinoma. Medullary carcinoma is never adherent. It may be

From The Charles T. Miller Hospital, Saint Paul, Kano Ikeda, M.D., Pathologist.

A talk delivered at the General Medical Staff meeting, April 6, 1945.

mistaken for a benign tumor. A nonadherent lump should be removed and examined microscopically, since a great many are benign. If a nonadherent mass has the form of a lobule and extends from the nipple to the periphery, it is almost certainly benign and usually no operative procedure is necessary. It is either cystic disease or fibrous mastitis. Multiple nonadherent masses in one or both breasts are nearly always cystic disease or some form of mastitis. Rarely a carcinoma of the medullary type is spread through the breast but not adherent. Still more rarely it is multiple fibroadenoma. Sometimes we see a half dozen or more fibroadenomas in one breast. Of course, if it is fibroadenoma you can get a pretty good idea clinically because it is so freely movable. Multiple adherent masses are carcinoma. Paget's disease of the nipple is a stubborn dermatitis of the nipple which may spread on to the aerola. Sometimes it has a fluid discharge and will not respond to the usual form of treatment. So, if you have a dermatitis of the nipple which will not respond to ordinary treatment, take a biopsy. You may find Page's disease of the nipple.

Mastitis in the newborn occurs in either boys or girls. There isn't anything to the breast except the nipple. The nipple has a reddened area about it and the breast is tender and looks like there is an inflammation in it, and it may secrete a milklike fluid which is called witch's milk. The breast is stimulated in some way by an endocrine so that it secretes and gets hyperemic like an inflammation. There is no tumor in the breast of a newborn. Do not operate but apply a protective dressing and it will get well. Mastitis of puberty occurs in girls about the age of puberty and also in boys. It is a swelling of the breast tissue about the time the breast begins to develop. The nipple is in the center of it with an indurated area about the nipple and it feels like a button if taken between the fingers. It is red, hot, and tender. A symmetrically round area with the nipple in the center is characteristic. The breast is stimulated by estrogens or androgens, and it becomes congested and tender. You would be surprised at the number of times these are taken off of young girls with a diagnosis of carcinoma. We do not have carcinoma in the breast at the time of puberty. I have seen only one case of carcinoma of the breast in a girl at or before puberty. The mastitis may last for several months. It is seen in boys about thirteen or fourteen. No treatment is needed. Some parents become alarmed about it. Some surgeons remove the breast. This does not make much difference to a boy but it does to a girl. True mastitis usually occurs during lactation or late pregnancy, and has the usual phenomena of inflammation: redness, swelling, and increased heat. If seen independent of pregnancy or lactation, you are fairly sure it is not a mastitis, as mastitis is hardly ever seen except in lactation or pregnancy.

At times, what looks like mastitis in a nonpregnant woman is an acute carcinoma of the breast. Acute carcinoma of the breast shows a diffuse inflammation, reddening, tenderness, sometimes a fever and a leukocytosis. If seen in a woman with no history of preg-

nancy, it is probably an acute carcinoma of the breast. This is one of the most malignant of all forms of breast cancer. This is brought about by the fact that all lymphatics around the skin are filled with cancer cells.

Frequently the presenting symptom is a discharge from the nipple. Four varieties of this group may be recognized:

1. A bloody discharge with a palpable tumor. This is usually a carcinoma but may be a large duct papilloma. The tumor should be removed and examined.

2. A bloody discharge with no palpable tumor. In my experience this has never proved to be a carcinoma. It is usually a benign duct papilloma but it may be a simple ectasia of the large ducts. There is no harm in waiting and trying to determine from which quadrant of the breast the blood is coming. Sometimes the bleeding ceases spontaneously. I do not think that a papilloma changes into a carcinoma. If the bleeding continues you may be able to locate the bleeding area and take out one quadrant of the breast. A couple of years ago, there was a physician's wife who had a bloody discharge and no tumor. The consultants were conservative, and were trying to avoid unnecessary surgery. They could not find a tumor and tried to find out from what part of the breast the bleeding was coming. She was a young woman in her early thirties. She was followed for two or three months, and then the bleeding ceased and it has not recurred in two years. There is no harm in taking your time if there is no tumor palpable in the breast.

3. Serous discharge with a palpable tumor may be either a carcinoma or papilloma. The tumor should be removed.

4. A serous discharge without palpable tumor. I have examined several breasts removed because of these signs. They show either dilated ducts or a cyst draining into a duct. I am quite sure you do not have to do anything about this, unless the woman is worried and wants it removed. Sometimes an operation is justifiable if the woman is greatly worried. There is one woman who has been coming to me year after year for fourteen years. She started when she was twenty-eight. Her condition has always been the same, serous discharge and no lump palpable. I am satisfied that is not carcinoma. I am not worried about a breast where you can't find a tumor. I know a lot of doctors do not agree with this. If there is a tumor there is no argument. Those that bleed will usually have papilloma in the duct. Some are afraid it may become cancerous, but this has not been proven.

To give you a view of the age distribution of the lesions which are found in women with palpable masses in the breast, I show you some tables drawn from my own experience. There is one malignant tumor in a twelve-year-old girl and another in a girl eighteen years old (Chart 1). So we are almost safe in saying that anything under twenty is not malignant. If you have the clinical signs of malignancy in a young woman you should, of course, treat it as malignant. It is very likely that a lump in the breast of a woman under twenty is not malignant. The tumors are fibroadenomas

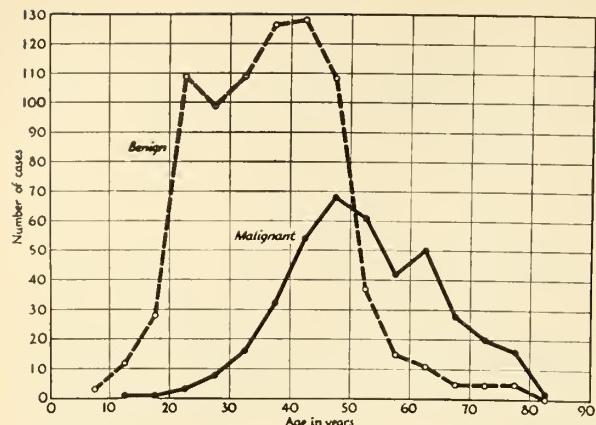


Chart 1.

and cystic disease. Even in the thirty- to forty-year group there is a great predominance of benign tumors. A lump in the breast of a woman between forty and fifty years of age has an even chance of being malignant. Between fifty and sixty years, the odds favor malignancy, in a ratio of 2 to 1, proportionately increasing as the woman gets older. I think you could say that if the woman is under twenty, malignancy is extremely unlikely. Under thirty, the chances are very great that it is benign. The older the woman, the more likely it is that the lump is carcinoma (Chart 2). If you take the benign conditions and separate fibroadenoma from cystic disease, fibroadenomas are most frequent in younger women. They reach their peak in the third decade and decline thereafter. Fibroadenomas are usually recognized rather easily clinically. They are usually single but occasionally multiple. They are freely movable in the breast. You can take your finger and push them around through the breast. They are hard. It is quite different from cystic disease or carcinoma. Fibroadenoma is the main tumor until after the age of thirty years. Then, cystic disease starts in. From forty to fifty is the peak of cystic disease. Fibroadenomas practically drop out entirely in women over sixty. Cystic disease is related to sexual life and disappears after the menopause. You hesitate in calling a thing fibroadenoma or cystic disease after the menopause. It is more likely a malignant disease.

Mastitis of puberty appears as a buttonlike induration of the breast with the nipple at the center. It is not more than 2 cm. in diameter. There may be local heat and tenderness. The mastitis of puberty is due to endocrine stimulation of the breast and should not be operated on. Mastitis of pregnancy and lactation is an acute or subacute inflammation which produces induration of the breast. There may be local heat and tenderness. Microscopically, tubercles are found which represent a foreign body reaction to milk which has escaped from the ducts. It is easily misinterpreted as tuberculosis. Never diagnose tuberculosis in the breast unless you have central necrosis or see tubercle bacilli. Tuberculosis of the breast is extremely rare. Fat necrosis comes from injuries to the breast. The

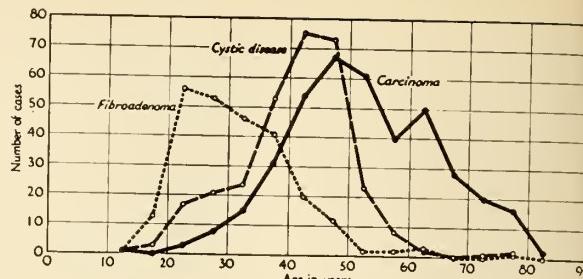


Chart 2.

lump is adherent to the skin and very superficial. An experienced man who has seen it before knows it from carcinoma. When cut, it is yellow and you see giant cells, epithelioid cells, fat cells, and fat necrosis. In chronic fibrous mastitis, the breast is indurated all over. It is just like a cake. You run your finger around the edge of the breast and it is round and hard. Grossly, it is very tough and fibrous. It looks like a scar tissue.

Cystic disease of the breast is one most common between thirty and fifty years of age. It is a non-adherent mass in the breast usually multiple but sometimes single, sometimes involving both breasts. It is also called Schimmelbusch's disease. I prefer cystic disease because that doesn't commit you to any etiology. It is related to the estrogenic function of the ovarian follicles. It only appears during sexual life from puberty to menopause. Large cysts may be seen with the naked eye. With the microscope we find other small cysts. The cystic lump cannot be moved about in the breast. It is not adherent to the skin or deep fascia. Multiple lumps make a diagnosis of cystic disease very probable. With a cystic mass, not adherent, you can sometimes insert a needle and drain the cyst. It may not be necessary to operate. The lump disappears and may not fill up for a long time. The disease usually tends to progress and more and more lumps develop and enlarge. They reach a maximum size and then remain stationary or regress. The best procedure is to remove the worst looking lump. If it shows cystic disease, no other operation is necessary. The breast remains lumpy but cancer develops no oftener than in a normal breast. Many people believe the breast should be removed because it might become cancerous. The risk of bilateral mastectomy is about as great as the risk of carcinoma. Cancer may develop in the cystic breast as in a normal breast. The patient should be observed from time to time. The patient should be told that other lumps may develop. Dr. O. J. Campbell followed 200 cases of cystic disease in women for five years or more. No cancer developed in these women. Simple cystic disease is due to dilatation or ectasia of the ducts. Adenocystic disease is the type which some call carcinoma. Some twenty-five years ago, many pathologists called this disease carcinoma and advised a radical operation. In adenocystic disease, there are multiple nonadherent masses in the breast which on section are solid and meaty looking. Use low magnification for the microscopic diagnosis.

If you notice lobulations like the breast of pregnancy with big ducts and secondary lobules, you know the growth is benign. There is a hyperplasia with a great many little ducts and acini. With the low power, the lobular arrangement is distinct. Under the high power, it looks like scirrhouus carcinoma. In some laboratories, it is called grade 1 carcinoma. When this benign lesion is considered a carcinoma, the curability of carcinoma of the breast is statistically increased.

Fibroadenoma is a nonadherent lump, usually single, sometimes multiple, and freely movable. You can push the tumor all around with the fingers. On removal the tumor is hard and rounded. Fibroadenomas should be removed because there is a little risk that they may become sarcomatous. Most of the sarcomas of the breast come from fibroadenomas.

A typical scirrhouus carcinoma of the breast is adherent. Nine out of ten carcinomas of the breast are scirrhouus. They are hard tumors and near the surface cause dimpling of the skin. Dimpling is due to the formation of scar tissue. It contracts and pulls the epidermis down and sticks to it. You can make the skin dimple by moving it from one side to the other. Take out the lump and look at the surface. There is nothing else like it. It is a hard, fibrous thing that runs out in weblike lines around the edges. It usually has yellow spots. Diagnosis is pretty simple. I don't think you need to use a cautery on the breast. A knife is just as good. As to danger of spreading the tumor, there seems to be practically none at all from cutting around the lump. The usual scirrhouus carcinoma has a lot of connective tissue. Epithelium is either in the form of solid cords or sometimes in gland formations.

We may classify breast cancers into three kinds: scirrhouus, medullary, and gelatinous; scirrhouus for the hard, medullary for the soft, and gelatinous for the slimy. In 714 cases of carcinoma, there were 645 scirrhouus, 45 medullary, and 24 gelatinous. Acute carcinoma of the breast should have a separate grouping. Medullary carcinoma is usually a small, nonadherent tumor in the breast, and forms into well-formed glands that could be called adenocarcinoma. Prognosis is somewhat better than the average. The unfortunate thing is so few are like it. Gelatinous carcinoma is soft and slimy. It is mucinous. Cells secrete mucin out into the stroma and make the tumor slimy. Masses of epithelial cells are in it. This has a little better prognosis than the scirrhouus.

The tumor that worries the pathologist more than anything else is a nonadherent tumor that is partly soft and partly hard, and when you squeeze it, oily material comes out which looks like a blackhead or comedo. We have learned by experience that comedo tumors are often carcinomas. Half the time, there is a real cancer in the breast. Advise the surgeon to do a simple mastectomy always. If you find nothing worse than a comedo, then you don't need to do a radical operation. Take time to search to see if there is carcinoma, because you may find it.

Paget's disease of the nipple is characterized by the clear Paget cells in the epidermis of the nipple. Make a biopsy with a sharp knife vertically through the epi-

dermis. If it is Paget's carcinoma of the nipple, do a radical operation, because sometimes there are axillary metastases. Under the high power, Paget's carcinoma shows masses of cancer cells that arise primarily from the ducts of the nipple.

Just a few words in closing. As to the prognosis of tumors of the breast, if the tumor is a comedo tumor the chances of cure are very good providing there is no cancer in the breast. If there is a small medullary carcinoma well differentiated into glands, the prognosis is pretty good. I don't think there is any point in grading these tumors. Ninety per cent of the cancers of the breast are scirrhouus. The only feature of value in the prognosis is whether or not there are metastases in the axillary nodes at the time of operation. You have to take out all the nodes and examine all of them. If there are no metastases in any of the nodes, the chances are two out of three that the woman will be alive four or five years later. If carcinoma is found in the axillary nodes, the chances are only one to five for a five-year survival. Prognosis in carcinoma of the breast as to cure is very poor. We do not talk about cure any more. If you take a group of 1,000 women who have carcinoma of the breast, real carcinoma and not cystic disease, 35 per cent will be alive at the end of five years. At the end of ten years, about 15 or 20 per cent will be living. After ten to fifteen years, 8 per cent will be alive. Some of these women die of another disease in the meantime. We never know when cancer of the breast is cured. I don't mean that we should not operate. The women live much longer if you operate and the ulcerating lesion of the breast is avoided.

DR. E. M. JONES: I am sure we all enjoyed Dr. Bell's talk. Now are there any questions?

DR. H. O. PETERSON: If there is any cancer, does x-ray therapy, pre-operative or postoperative, do any good?

DR. BELL: I would say first that x-ray is extremely valuable in local skin recurrences of cancer of the breast. It cures them. As to whether one should give a pre-operative or postoperative irradiation to the breast, we only go by statistics, and these are not in agreement. My own opinion about it is that irradiation does not make any difference in the ultimate outcome of the case, either pre-operative or postoperative. Women will live just about as long if you do a radical operation. As soon as the diagnosis is established, give irradiation for any recurrences that may appear. Now, of course, the inoperable case is another thing, and irradiation sometimes prolongs life a long time. I know that the radiologist isn't given a chance at tumors that are operable. Tumors do respond to irradiation very well. Inoperable ones do live longer.

DR. G. D. BRAND: What about castration by x-ray?

DR. BELL: Castration with x-ray was thought to be very valuable about five years ago. A woman with carcinoma of the breast with metastases to all the

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bones, had lost considerable weight. They irradiated her ovaries, and all of the symptoms disappeared. The woman came back to almost perfect health, as reported at that time. Three years later she died of recurrence. Most of the tumors develop after menopause—about half of them. I don't think that it is worth while to sterilize the cancer patient. I have seen it tried many times but usually with failure.

DR. J. S. ABBOTT: What are the criteria of inoperability?

DR. BELL: One of the most important things is supraclavicular metastases. Any metastases that you can disclose outside of the axillary nodes make it inoperable. I think supraclavicular nodes are a contraindication to operation. I think acute cancer of the breast is inoperable. Tumors that cover a large area of the breast and are adherent to the deep fascia are inoperable. They usually have entered the mediastinum, and it is impossible to remove them. Recurrences that you see many years later are usually in the bones. A woman has pain in the back, and x-ray shows metastases to the thoracic and lumbar vertebrae. These tumor cells rest for ten or twenty years. Why they stay quiescent and then flare up, no one seems to know.

DR. HERMAN WOLFF: Is there any evidence of estrogens causing carcinoma in the breast?

DR. BELL: I do not have any opinion based on my own observation. I think that the amount that most men give is not likely to produce any changes. In animals, they give enormous amounts compared to what a physician gives. If you want to give estrogens where you think they are indicated, I don't think you need be afraid of starting up carcinoma of the breast.

DR. IKEDA: One thing we might emphasize here is the observation that there are degrees in "hardness" in various types of growths in the breast, not only after they are removed and felt between your fingers as specimens, but on palpation *in situ*. There is nothing so hard as the hardness of scirrhouus cancer which is woody or almost stony. There is no "give" to it. The hardness of fibroadenoma and cyst may be described as "rubbery." I consider this a valuable sign in differential diagnosis. I wish to take this opportunity to express my deep personal appreciation of this very clear presentation of the subject of breast tumors by Dr. Bell, who is appreciated by all of us pathologists as particularly outstanding in tumor diagnosis, without belittling, in any way, his great contributions to other fields of special pathology.

## PARENTERAL FLUID THERAPY

RUBEN F. SCHMIDT, M.D. and ARTHUR H. WELLS, M.D.

Duluth, Minnesota

DR. A. H. WELLS: I should like to venture that physicians use more parenteral fluids and know less about their use than any other common form of medical therapy. We are about to present a case illustrating one of the more common of several serious errors which are recognized too frequently at necropsy. In addition, the resident staff has prepared a brief symposium on parenteral fluid therapy which I am sure you will find well worth your concentrated attention.

### Case Report

DR. R. F. SCHMIDT: A seventeen-year-old Finnish farm girl had apparently been in excellent health until twelve hours before admission to the hospital. She was awakened during the night by a sudden onset of persistent right lower quadrant pain which kept her from sleeping. After a few hours she became nauseated and had several watery bowel movements. The steady pain became gradually more severe and the nausea was persistent so that she avoided food. Her abdomen was diffusely tender with more severe tenderness in the right lower quadrant associated with some spasticity and rigidity of the lower abdominal muscles. The right adnexa were extremely tender and rotation of the

uterus caused extreme pain in the right lower quadrant of the abdomen. The white blood cell count was 12,000 with a moderate increase in the percentage of neutrophiles, and the hemoglobin was 10.25 grams. Her blood pressure was 60/40 and her pulse rate was 160 per minute and of regular rhythm. Her hands were cold and moist. She was in her mid-menstrual period. The differential diagnosis lay between acute appendicitis, ruptus corpus luteum cyst and ectopic pregnancy. An immediate exploratory laparotomy revealed a ruptured corpus luteum cyst with approximately 500 c.c. of bright red blood and clots in the peritoneal cavity. The involved ovary was resected and the bleeding controlled. After the operation there followed a rather stormy twelve hours during which time the patient received 2,000 c.c. of saline with 5 per cent glucose and one 500 c.c. transfusion of whole blood. During this period her blood pressure was very labile and on occasions was found as low as 78/50. By the following day, however, it was fairly steady at 110/56 with a pulse rate of 120 per minute. Her red blood cell count was 1,700,000, the hemoglobin 4.75 grams and a white blood cell count was 8,950. She died 62 hours postoperative. During the last 48 hours her pulse ranged from 120 to 140 and her blood pressure reading tended to fall from a height of 118/58 to 100/50. Dur-

From the St. Luke's Hospital, Department of Pathology, Arthur H. Wells, M.D., Pathologist, and Ruben F. Schmidt, M.D., Resident.

ing this period she received 3,000 c.c. of saline with 5 per cent glucose and one additional 500 c.c. blood transfusion. During the last twelve hours her breathing became labored. She developed an almost constant unproductive cough, and cyanosis of the lips. Her respirations were 36 to 38 per minute and the pulse was 140 to 160 per minute. The nurse could hear coarse râles. The pulse became thready and she died with Cheyne-Stokes respiration.

#### Autopsy

**DR. A. H. WELLS:** The only findings of significance in the postmortem examination were those of approximately 800 c.c. of intraperitoneal blood diluted possibly 50 per cent, a severe edema of retroperitoneal tissues, mesentery and other connective tissues supporting the various organs of both the abdomen and thorax including a grade IV pulmonary edema. Clear, watery fluid ran in large quantities from the cut surfaces of all lobes of the lungs. They were very poorly aerated.

#### Discussion

**DR. A. H. WELLS:** In my opinion this death is due to a common mistake of giving excessive salt solutions in place of adequate transfusions of whole blood or plasma. It illustrates the danger of large quantities of saline in any postoperative patient as emphasized by Coller and co-workers<sup>10</sup>, Blalock<sup>4</sup>, Wangenstein<sup>35</sup>, and others. This patient only excreted 800 c.c. of urine during the sixty-two hours of life following the laparotomy. Much of the rest of the fluid given her passed out into various tissues throughout the body eventually causing death by displacing the air from the alveoli of her lungs. No doubt a loss of blood played an important role in the cause of death by accentuating the effect of the hypoxia resulting from the pulmonary edema.

We will now proceed to a brief review of the basic principles and important trends in this field of therapy.

#### Water

**DR. F. H. WALTER:** The estimated daily water maintenance requirements<sup>5</sup> to replace losses by way of the urine, stool and insensible perspiration of an average adult is from 1,500 to 2,100 c.c. Additional daily allowances of from 1,000 to 2,000 c.c. must be made for sweating and febrile patients.<sup>6</sup> Where appreciable volumes of water are being lost by prolonged gastric and duodenal aspirations, vomiting, or diarrhea, the lost fluid must be measured where possible and replaced volume for volume.

An excellent means of checking a patient's state of hydration other than that of gross inspection is furnished by measuring the total output and specific gravity of the urine. An average adult must excrete about 35 grams of waste material in the urine daily. According to Lashmet and Newburgh it requires about 500 c.c. urine with a specific gravity of 1.030 or about 1,400 c.c. with a specific gravity of 1.010 to excrete 35 grams of solids.<sup>8</sup> Coller and co-workers<sup>10</sup>, Wangenstein<sup>35</sup>, Graham<sup>20</sup>, White, Sweet and Hurwitt<sup>37</sup> have

recommended as satisfactory a urine output varying from 800 to 1,000 c.c. daily. Oliguria as a result of cardiac or renal decompensation, surgery or other trauma must be differentiated from inadequate water intake. Degrees of hemo-dilution or hemo-concentration have been followed by repeated determinations of hemoglobin, red blood cell count, hematocrit, or plasma proteins. The results of these tests must be interpreted in the light of all of the clinical manifestations. If there are physical evidences of dehydration, then water to the extent of at least 6 per cent of the body weight has been lost.<sup>18</sup>

Wangensteen<sup>35</sup> routinely weighs all patients following major surgical procedures. At any time in the post-operative period it is then possible to accurately determine the comparative state of hydration. Thus in a patient with postoperative oliguria with a gain of 3 or 4 per cent over the pre-operative weight, water administration is discontinued to avoid pulmonary edema.

If I can contribute but one thing to your information this evening it should be the difference between water and saline solution. The most common and serious error that I have witnessed is the use of isotonic saline to hydrate a patient disregarding its salt content. When water alone is needed, give it in the form of a glucose solution.

#### Salt

**DR. C. R. HITCHCOCK:** The optimum daily intake of sodium chloride for an adult has been estimated<sup>5</sup> at about 6 grams, or the amount of salt in about 700 c.c. of isotonic saline. Parenterally administered saline in excess of this amount may result in fluid retention. Such retention leads to poor healing of surgical wounds, pulmonary edema<sup>15,18</sup>, possible edema and obstruction of intestinal anastomoses<sup>17</sup> and cerebral edema following craniotomy.<sup>37</sup> Normal persons can excrete excesses of salt up to 40 grams per day.<sup>31</sup> Seriously ill medical and surgical patients given much smaller amounts of salt may retain fatal quantities of the chemical. Special care must be observed when a patient is hypoproteinemic, anemic, acidotic or oliguric.

Excessive losses of sodium chlorides through vomiting, gastric or duodenal aspiration, diarrhea, intestinal or gastric fistulae, bile drainage, etc., lead to lassitude, weakness, drowsiness, anorexia, nausea, muscle cramps, dehydration and finally shock.<sup>3,9</sup>

An accurate clinical evaluation of the amount of chloride loss cannot be substituted for by any laboratory procedure. We must always remember that the loss of body fluids from various portions of the body give rise to entirely different chemical pictures. Thus in excessive vomiting or loss of fluids from the stomach or duodenum we see chloride deficiencies and a resultant state of alkalosis. In such cases we wish to supply the chloride ion. When losses are from the lower gastrointestinal tract, as in diarrhea, we have an acidosis resulting because excess sodium is lost. These cases require therapy with the sodium or basic ion. However, there is an automatic readjustment in the kidney functions to restore the normal

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volumes of extracellular fluid by washing out the unwanted ion and retaining the desired ion.

For confirmatory evidence and evaluation of therapy quantitative plasma chloride determinations are of aid. It must be kept in mind that the plasma chloride level cannot be used as an index of excessive salt administration,<sup>9,12</sup> since the result of salt retention is edema and not hyperchloremia. Coller and associates<sup>9,10</sup> have found that plasma chloride levels under varying circumstances had to be interpreted with great care. They have depended more on clinical observations rather than laboratory procedures. The carbon dioxide combining power is another useful test. Decreased volumes below 50 volumes per cent indicate acidosis or excessive loss of sodium ion. While relatively high chloride ion loss is evidenced by readings over 75 volumes per cent. Direct pH. readings of the blood have been found useful for similar reasons.

After much critical study of the dangerous complications of excessive sodium chloride therapy, Coller and associates have retracted many of their earlier conclusions. No chloride is now given during the day of surgery or the first two postoperative days. Water is furnished either by mouth or parenterally as glucose solution. Measured losses of extracellular fluids during this period are made up by equal volumes of 5 per cent saline to which 50 grams per liter of dextrose has been added.<sup>6</sup> Sodium bicarbonate is used when there is a relatively severe sodium deficiency as indicated by the carbon dioxide combining power. In Coller's clinics physiologic responses to test doses of the appropriate salt solution are now depended upon rather than the several laboratory procedures mentioned. Laboratory tests are used to confirm the clinical impressions.

### Glucose

DR. H. A. DASLER: The primary purpose of carbohydrate in complete parenteral substitution therapy is to cover the basic caloric requirements in order to accomplish effective sparing of the endogenous protein.<sup>24</sup> Adults require 25 calories per kilogram of weight under basal conditions. One gram of sugar equals 4 calories. A 60-kilogram or 132-pound person requires 400 grams of dextrose, and a 176-pound man will require 450 grams of dextrose per day. The optimum rate of administration of dextrose has been defined as approximately 0.8 grams per kilogram per hour,<sup>26,39,7</sup> for from six to twelve hours in the average individual. Infection, temperature, state of nutrition, available potassium, available phosphorus, cellular enzymes and trauma may be factors<sup>13,38,19,16</sup> affecting the not infrequent variation in degree of hyperglycemia and glycosuria resulting from this rate of glucose infusion. More rapid rates may result in hyperglycemia, glycosuria, cardiac embarrassment and pulmonary congestion. The latter two are predisposed to by infection, trauma and cardiovascular disease.<sup>26,11,17,27,34,29</sup>

A 132-pound adult can be given his required 400 grams of dextrose at 0.8 grams per kilogram per hour in nine hours. In selecting the strength of the dextrose

solution it will be noted that this much sugar in a 5 per cent dextrose solution will require a total of 8,000 c.c. of solution, at 15 per cent strength 2,500 c.c. will be required and at 50 per cent strength 800 c.c. are necessary. The 5 per cent dextrose would have to be given at 16.5 c.c. or 297 drops per minute and the 15 per cent solution must be given at 5 c.c. or 90 drops per minute. The selection may depend on the patient's state of hydration or possible necessary limitations of water intake as in cardiac decompensation.<sup>29</sup> Thromboses of veins are more frequent when dextrose in higher concentrations is used. Much clinical experience has led to the average optimum concentration of 15 per cent where complete parenteral substitution therapy is enforced.<sup>5</sup> In my brief experience simultaneously administered insulin greatly aids in the rapid utilization of glucose in some patients.

### Protein

DR. R. H. INTRESS: The causes of hypoproteinemia generally fall under one of four groups: (1) insufficient intake; (2) insufficient absorption; (3) excessive loss; and (4) faulty protein formation. Insufficient intake may be the result of dietary restrictions, anorexia and hypermetabolic states. Vomiting, diarrhea, alterations of the gastro-intestinal mucosa or enterostomies, may seriously interfere with protein absorption. Excessive losses of proteins<sup>32,23,2</sup> through hemorrhage, burn, proteinuria, draining sinuses and draining ascitis or pleural fluids represent the largest clinical group requiring protein therapy. Faulty protein formation has been described as being due to impaired liver function,<sup>25,28</sup> systemic infections and congenital defects.

The more important effects of inadequate body proteins have been described as edema, including pulmonary edema and delayed wound healing,<sup>20,21</sup> intestinal stasis,<sup>22</sup> lowered tissue resistance to infections and a predisposition to shock.

The indications<sup>1</sup> for intravenous alimentation of proteins depends upon both clinical observations and laboratory measurements. At least three measurements are necessary for the proper evaluation of extracellular proteins: (1) serum protein; (2) blood volume; (3) extracellular tissue proteins. The latter reservoir cannot be measured. Recent methods of determining blood volume may provide practical aid in the future. The serum protein levels are quite significant in moderate and severe protein deficiency. However, the detection of minor though apparently significant grades of protein deficiency cannot be determined by any known test in present use.

Parenteral protein therapy choice is limited to whole blood, plasma and its components and various amino acid preparations. The estimated minimum daily requirement 5 of 40 grams of protein can be supplied by approximately 1,000 c.c. of blood or 500 c.c. of plasma at an approximate cost of \$60.00. "Panenamine" or "amigen" both proprietary preparations of amino acids can be supplied at \$4.00 for 30 grams. The relative physiologic values of these various sources

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es must be decided with wider usage.<sup>33</sup> "Panenamine" has a decided practical advantage of being usable in any saline or glucose solution which the patient may be receiving.

### Summary

**DR. A. H. WELLS:** We have presented a young surgical patient suffering from hemorrhage who was given a fatal dose of sodium chloride and water. A very brief review of the basic principles and trends of the use of water, salt, glucose, and proteins in parenteral therapy has been covered.

### References

1. Abbott, W. E., and Mellors, R. C.: Total circulating plasma proteins in surgical patients with dehydration and malnutrition; indications for intravenous alimentation with amino acids. *Ann. Surg.*, 46:277, 1943.
2. Altshuler, S. S., Sahyun, M., Schneider, H., and Satriano, D.: Clinical use of amino acids for the maintenance of nitrogen equilibrium. *J.A.M.A.*, 121:163, 1943.
3. Atchley, Dana W.: Dehydration and medical shock. *Bull. New York Acad. Med.*, 10:138, 1934.
4. Blalock, A.: Principles of surgical care, shock and other problems. pp. 158-160. St. Louis: C. V. Mosby, 1940.
5. Butler, Allan M., and Talbot, Nathan B.: Parenteral fluid therapy, estimation and provision of daily maintenance requirements. *New England J. Med.*, 231:585-590, (Oct. 26) 1944.
6. Butler, Alan M., and Talbot, Nathan B.: Parenteral fluid therapy, the estimation of losses incident to starvation and dehydration with acidosis or alkalosis and the provision of repair therapy. *New England J. Med.*, 231:621-628, (Nov. 2) 1944.
7. Cain, J. C., and Belk, W. P.: Assimilation rate of intravenously injected glucose in hospital patients. *Am. J. M. Sci.*, 203:359-363, 1942.
8. Coller, F. A.: A review of studies on water and electrolyte balance in surgical patients. *Surgery*, 12:192, 1942.
9. Coller, F. A., Bartlett, R. M., Bingham, D. L. C., Maddock, W. G., and Pederson, S.: The replacement of sodium chloride in surgical patients. *Ann. Surg.*, 108:769, 1938.
10. Coller, F. A., Campbell, Kenneth N., Vaughan, Herbert H., Tob, L. Vivian, and Moyer, Carl A.: Postoperative salt intolerance. *Ann. Surg.*, 119:533-542, (April) 1944.
11. Coller, F. A., Dick, V. S., and Maddock, W. G.: The maintenance of normal water exchange in intravenous fluids. *J.A.M.A.*, 107:1522, 1936.
12. De Wesselow, O. L. V.: The variations in the chloride content of the blood. *Internat. Clin.*, 3:191, 1924.
13. Fenn, W. O.: Deposition of potassium and phosphate with glycogen in rat livers. *J. Biol. Chem.*, 128:297-307, 1939.
14. Graham, R. R.: Technical surgical procedures for gastric and duodenal ulcer. *Surg., Gynec., & Obst.*, 66:269, 1938.
15. Hartwell, J. A., and Hoguet, J. P.: Experimental intestinal obstruction in dogs. *J.A.M.A.*, 59:82, 1912.
16. Holmer, E.: Effect of toxemia on metabolism. *Physical Rev.*, 19:439-471, 1939.
17. Jones, C. M., and Eaton, F. B.: Postoperative nutritional edema. *Arch. Surg.*, 27:159, 1933.
18. Jones, C. M., Eaton, F. B., and White, J. C.: Experimental postoperative edema. *Arch. Int. Med.*, 53:649, 1934.
19. Koster, H.; Collins, W. S., and Goldzicher, M. A.: Intravenous injection of glucose, its effect on respiratory quotient. *Am. J. Surg.*, 8:970-974, 1930.
20. Koster, H., and Kasman, L. P.: The relation of serum protein to well-healed and disrupted wounds. *Arch. Surg.*, 45:776, 1942.
21. Koster, H., and Shapiro, A.: Serum proteins and wound healing. *Arch. Surg.*, 41:723, 1940.
22. Leigh, O. C., Jr.: Ileus associated with edema of the bowel. *Surg., Gynec., & Obst.*, 75:279, 1942.
23. Lucido, J.: Metabolic and blood changes in severe burn. *Ann. Surg.*, 111:640, 1940.
24. Madden, S. C.: Verbal report: Committee on convalescence and rehabilitation. National Research Council, 1944.
25. Madden, F. C., and Whipple, G. H.: Plasma proteins, their source, production and utilization. *Physiol. Rev.*, 20:194, 1940.
26. Matas, R.: The continuous intravenous "drip." *Ann. Surg.*, 79:643, 1924.
27. McCray, P. M., Barden, R. P., and Ravidin, I. S.: Nutritional edema; its effect on the gastric emptying time before and after gastric operations. *Surgery*, 1:53, 1937.
28. Miller, L. L., and Whipple, G. H.: Chloroform liver injury increases as protein stores decrease. *Am. J. M. Sci.*, 199:204, 1940.
29. Murphy, F. D., Correll, H., and Grill, J. C.: Effects of intravenous solutions on patients with and without cardiovascular defects. *J.A.M.A.*, 116:104-108, (Jan. 11) 1941.
30. Paine, J. R., and Armstrong, W. D.: A study of the fluid and sodium chloride balance in patients treated with continuous suction applied to indwelling duodenal tubes. *Surg., Gynec., & Obst.*, 68:751, 1939.
31. Peters, J. P., and Van Slyke, D. D.: Quantitative clinical chemistry. Vol. I, Interpretations. Baltimore: The Williams and Wilkins Co., 1937.
32. Ravidin, I. S.: Hypoproteinemia and its relation to surgical problem. *Ann. Surg.*, 112:576, 1940.
33. Rose, W. C.: The nutritive significance of the amino acids. *Physical Rev.*, 18:109, 1938.
34. Stewart, I. D., and Rourke, G. M.: Effects of large intravenous infusion of body fluids. *J. Clin. Investigation*, 21:197-205, 1942.
35. Wangenstein, O. H.: The controlled administration of fluid to surgical patients including description of gravimetric methods of determining status of hydration and blood loss during operation. *Minnesota Med.*, 25:783-789, (October) 1942.
36. Wangenstein, O. H.: Intestinal obstructions: a physiological and clinical consideration with emphasis on therapy; including description of operative procedures. Springfield, Illinois: Charles C. Thomas, 1942.
37. White, J. C., Sweet, W. H., and Hurwitt, E. S.: Water balance in neurosurgical patients. *Ann. Surg.*, 107:438, 1938.
38. Winslow, S.: Dextrose utilization in surgical patients. *Surg.*, 4:867, 1938.
39. Woodyatt, R. T.; Sansum, W. C., and Wilder, R. M.: Prolonged and accurately timed intravenous injections of sugar. *J.A.M.A.*, 65:2067-2070, 1915.

### TYPE EARLY FOR Rh

Blood typing to see whether a patient has Rh negative blood, making repeated transfusions with Rh positive blood hazardous or even fatal, must be done before the first transfusions in order to give reliable results, British medical scientists warn in the *British Medical Journal* (April 28).

The tragic case of a woman who received ten transfusions, most of which were from donors with Rh positive blood, before it was discovered that she had Rh negative blood is described by Drs. R. Drummond, G. L. Taylor and J. T. Rice Edwards. In the meantime she had built up extremely potent antibodies to destroy the Rh positive blood given her.

The woman came to the doctor's attention suffering from a disease of the lymph glands which necessitated transfusions. She had no apparent ill effects from the first two transfusions. It was after the third that she had trouble and her blood was then typed for Rh. Although her blood was Rh negative, the tests at that time indicated that she was Rh positive, the deceptive results being due to the large quantity of transfused Rh positive blood.

When they later found out that the woman's blood was Rh negative, the physicians were puzzled that there were no more serious symptoms as a result of the Rh positive transfusions. Except for the difficulty with the third transfusion, the first six transfusions showed no obvious ill effects. The symptoms during the seventh were not especially severe. Nothing happened during the eighth and ninth transfusions although bad symptoms did develop later. And yet in the ninth transfusion just about a quart of red blood cells was given—donated by four Rh positive donors.

The scientists believe that the patient withstood this experience because of the fact that the blood was transfused by the slow drip method, which lessens the severity of reactions when they occur.

Fourteen more transfusions were given the patient, using blood from 27 Rh negative blood donors. Although improvement followed each transfusion and the hemoglobin was raised from 29 per cent to 70 per cent, the patient's original illness became worse and she finally died.—*Science News Letter*, June 2, 1945.

## CASE REPORT

### SARCOID SPLEEN

JOHN M. CULLIGAN, M.D., and WILLIAM T. SNODDY, M.D.

Saint Paul, Minnesota

A white woman, aged thirty-six, unmarried, was admitted to St. Joseph's Hospital, Saint Paul, Minnesota, March 29, 1945. Her chief complaint was persistent vomiting. She had been well until August, 1944, when she began to have dull backaches during the night and would be very tired when arising every morning. She also had a great deal of dull aching pain in both hips and upper thighs. Her temperature was 100 to 101 degrees every day. Aspirin or anacin gave some relief. In October, 1944, she had gradual onset of epigastric distress with nausea and vomiting. She was given an antacid every two hours and a glass of milk between each antacid. Under this treatment her nausea and vomiting became more severe and more frequent. On November 14, 1944, x-ray examination revealed a large normal gall bladder. On November 15, 1944, roentgenograms of stomach were negative. In December, 1944, she was given Bilron capsules one-half hour before each meal and thereafter experienced no nausea or vomiting until March 15, 1945, about two weeks before admission to the hospital. However, her lassitude, fatigue and joint pains were still present most of the time. At this time physical examination revealed a mass in the left upper abdominal quadrant and arrangements were made for admission to the hospital to determine the exact nature of this mass. She had lost thirty-three pounds during the previous year and her present weight was 109 pounds. Her appetite had been fairly good until December, 1944, but after that she had no desire for food. For constipation during the preceding ten to fifteen years she had taken laxatives such as milk of magnesia several times each week. Her stools have been of normal size, shape and color with no blood, pus or mucus.

*Past History.*—Patient had had measles, whooping cough, and chicken pox in childhood with no sequelae or complications. She had had a tonsilectomy in 1911, an appendectomy in 1921, a uterine suspension in 1924 for severe menstrual pain (no relief was obtained from this operation) and she had had a hemorrhoidectomy in 1926. In 1931 she developed an intolerance to fatty foods associated with flatulence and gaseous eructations but no jaundice or clay-colored stools. She was told that she had gall-bladder disease with no stones. By avoiding greasy foods these symptoms had been controlled since that time.

*Physical Examination.*—On March 29, 1945, when the patient was admitted to the hospital, physical ex-

amination revealed a well-developed, fairly well-nourished patient, subacutely ill. Her temperature was 99.4 F., pulse 100 and respiratory rate 24. The head, ears, eyes, nose and throat were essentially normal. The thyroid was not palpable. No lymph glands were palpable. The heart was normal in size, shape and position with no murmurs. The lungs were clear and resonant. There was a large mass in the left upper quadrant of the abdomen measuring five by ten inches. The mass was not freely moveable but did move with respiration. There was an indefinite notch on the medial side of the mass which suggested an enlarged spleen. The area over the mass was dull to percussion. There was no tenderness in the abdomen except in the right costovertebral angle. Abdominal examination was otherwise negative. The joints and extremities presented no positive physical findings and this was also true of the remaining physical examination.

*Laboratory Tests.*—Admission laboratory studies revealed an acid, straw-colored urine, specific gravity of 1.010, albumin a trace, 2-3 hyaline, cylindroid and finely granular casts per H.P.F., 4 to 5 red blood cells per H.P.F. and 810 white cells per H.P.F. The hemoglobin was 65 per cent. The red cell count was 3,260,000. The white cell count was 8,000. The differential count revealed 58 per cent polymorphonuclear cells, 35 lymphocytes, 3 eosinophils, 1 basophil and 3 monocytes.

It was thought the patient had an enlarged spleen causing pressure on the stomach and other abdominal organs. The etiology of the enlarged spleen could not be determined. To rule out an ectopic or enlarged left kidney an intravenous urogram was done on April 2, 1945. The conclusions from this were diminished function of both kidneys, possible renal calculus in the middle calyx of the right kidney 3 by 4 mm. in size, and a mass approximately 6 by 10 cm. in size, overlying the upper pole of the left kidney. Retrograde pyelograms April 3, 1945, revealed a right renal calculus and a left extra renal tumor. Roentgenograms of the gastro-intestinal tract with barium on March 29, 1945, and April 4, 1945, were negative except for a mass seen on the greater curvature of the stomach above the angle and extending upward to the region of the costal margin. The mass could not be fully identified but appeared most likely to be spleen.

*Diagnosis.*—With the above findings it appeared definite the mass was an enlarged spleen and was prob-

## CASE REPORT

ably producing most of the disturbing symptoms. With this diagnosis the patient was explored April 6, 1945, and a splenectomy was done.

*Operation.*—"Upper left rectus incision, spleen was moderately enlarged and was coarsely granular and nodular throughout—four or five accessory spleens were also present. Spleen delivered with some difficulty—pedicle clamped—spleen removed—pedicle double ligated—accessory spleens also removed.

Negative exploration of gall bladder and stomach.

On palpation of the uterus a pedunculated fibroid was found on the dome of the uterus—this was excised. Bleeding controlled by ligatures. Wound closed with double chromic, silk worm and clips. One skin drain."

*Pathological Report.*—(John F. Noble)—"The spleen weighs 2.5 pounds. At the hilus there is an accessory organ about 1.5 centimeters in diameter. The spleen is firm and on section the cut surface is greyish-red in color and somewhat mottled. Small nodules are visible through the capsule although the cut surface is more homogenous in appearance. The gross picture suggests either a tumor or Hodgkin's infiltration. The tumor of the uterus is ovoid and measures 7 centimeters in length and 4.5 centimeters in diameter. It is firm and fibrous in consistency. There is no gross evidence of malignancy.

*Microscopic:* Sections of the spleen show it to be almost completely replaced by fairly discrete but closely packed granulomatous nodules. These are composed of epithelioid cells together with numerous giant cells resembling the Langhan's cells. The tubercle-like structures, however, show no evidence of caseation and the picture is that of a sarcoidosis. In certain regions the splenic pulp is fibrous. The entire architecture of the spleen is destroyed by the granulomatous process. Sections of the tumor of the uterus show it to be composed of interlacing bundles of smooth muscle and connective tissue.

*Diagnosis:* Sarcoidosis of the spleen; splenomegaly; fibromyoma of the uterus."

For the first five or six days postoperatively the patient had some nausea and vomiting. Since then she has not vomited; is not tired when out of bed and doesn't have a backache while lying in bed.

Blood studies on April 19, 1945, revealed red blood cell count 3,620,000, hemoglobin 72 per cent and white blood cell count 7,700.

Röntgenograms on April 18, 1945, revealed no findings of sarcoid of the hands, feet or chest.

The patient was dismissed from the hospital on April 22, 1945. She was examined May 10, 1945, and was much improved and had gained weight.

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## VENEREAL DISEASE CASE FINDING

Recent years have witnessed remarkable advances in the treatment of venereal diseases. However, neither society nor individuals will derive appreciable benefit unless these advances in medical science can be applied to infected persons early in the course of their disease. Each year a larger number of persons are infected with syphilis but do not begin treatment until the latent or late stages, if at all. The proportion of the total cases of gonorrhea coming to treatment cannot be estimated but is probably less than that of syphilis. It is obvious, therefore, that more effort must be expended on case finding.

Education is an effective means for bringing large numbers of persons to voluntary treatment. In primary and secondary syphilis, gonorrhea and other venereal diseases, it leads all other methods of case finding. As might be expected, routine or screening tests bring in the bulk of the latent (symptomless) syphilis. However, a physical examination given in connection with the blood test can have great value as a means of finding symptomatic venereal disease, as has been demonstrated among Selective Service candidates and persons examined at the direction of courts or police. Contact investigation, the theoretically perfect method, has proved somewhat disappointing in practice, although the improvement demonstrated after conscious effort offers hope of better future performance.

It is important to note that contact investigation is the only case-finding device which, in theory, can reach all infectious cases. Education has its limitations because (a) it does not reach everyone, (b) presumably some venereal disease is symptomless in the early stages,

and (c) individual persuasion is necessary to induce some persons to come for examination. Likewise, routine or mass serologic tests for screening purposes do not detect the presence of syphilis in the highly infectious seronegative primary stage nor in the stage before lesions develop, and in areas of low prevalence they are wasteful procedures. Contact investigation, therefore, remains the only universally applicable weapon which can function when all else fails and which will carry over into the era of controlled venereal disease. The disappointing result it has yielded heretofore, which is probably due to faulty techniques, must not lead to its abandonment.

The need for wider participation of the private physician in case finding is evident. He is responsible not only for the administration of therapy, but also for the bringing of new cases to treatment. He should be greatly concerned with the education of the patient regarding the nature and the possible effects of the disease. Furthermore, either he or a trained health department epidemiologist should obtain from the patient complete and accurate contact information, and the doctor's influence should be used in bringing exposed persons to examination.

All methods of case finding must be utilized to the utmost, the choice being determined by circumstances surrounding the individual situation. In addition, there must be a process of continuous improvement of old methods and development of new ones if the case-finding phase of the control program is to keep pace with the advance in therapeutic techniques.—*Venereal Disease Information*, June, 1945.

## HISTORY OF MEDICINE IN MINNESOTA

### NOTES ON THE HISTORY OF MEDICINE IN HOUSTON COUNTY PRIOR TO 1900

By NORA H. GUTHREY†

Mayo Clinic

Rochester, Minnesota

"Jurisdiction over Houston County has been claimed by four nations: Spain, France, England and the United States; by the French and English Colonial authorities; by Louisiana District; by the executive power of the territory of Indiana; by the territories of Louisiana, Missouri, Michigan, Wisconsin, Iowa and Minnesota, and by the State of Minnesota. As a part of Minnesota Territory it was included in Wabasha and Fillmore Counties before attaining county privileges itself."

*History of Houston County, 1919, page 58.*

The stories of the pioneer physician, of the development of medicine, and of civilization are closely interwoven. One who would know the lives of the early physicians must consider the various influences that determined the growth of the communities in which they lived.

The State of Minnesota, admitted to the Union on May 11, 1858, occupies the approximate center of North America, and of this state Houston County is situated at the southeastern corner, one of the most beautiful portions of a beautiful land. The part of the region that borders on the Mississippi River is rugged and picturesque; from the Mississippi, hills and valleys extend westward to the rolling prairies of the central and western portions of the county. The greater part of the county is well watered by many rivers and creeks, a large proportion of which are springfed. Named for General Sam Houston, Houston County is bordered by Winona County on the north, the Mississippi River on the east, Alameda and Winnesheik Counties of Iowa on the South, and Fillmore County on the west.

The part that the Mississippi River has played in the development of the communities along its banks, as of the states that lie in its valley, has been treated in appreciative detail in many histories. Nor does the story of Minnesota, through the period of exploration, which began in 1680 and ended in 1835, require more than mention here. Father Louis Hennepin and his two companions, in 1680, were probably the first civilized men to see the bluffs of Houston County. Others, explorers, fur traders and lumbermen, came in the succeeding century and a half, but it was not until nearly a decade after the advent of soldiers at Fort Snelling, in 1819, that settlers began to arrive in southern Minnesota in any appreciable number. The military expedition under Lieutenant Colonel Stephen W. Kearney which in 1835 traveled overland to Winona from Iowa, from the southwest, crossed a corner of the future Houston County.

In these notes there is included much material relating to general history and the conditions of pioneer life and to medical history and the early conditions of practice that applies not to Houston County alone but to all the counties of southeastern Minnesota. The experiences of the settlers of the region, including physicians, in establishing homes and livelihoods, towns, schools and churches were essentially the same. Therefore, in the sketches of medical history in Fillmore County and in Olmsted County that are to follow in due time, the common background given here will not be repeated in detail.

†Member of the Editorial Department, 1916-1919; 1919-1939, personal secretary and assistant to the late Dr. William James Mayo.

## HISTORY OF MEDICINE IN MINNESOTA

By 1835 opportunity awaited in southeastern Minnesota for all who would serve the new land. In the early decades of the nineteenth century the Root River Valley and the adjacent territory were ranged by a band of Dakota Indians, who were a division of the Sioux. As the result of a series of treaties, lands in southern Minnesota, including those which comprise Houston County, passed from the Indians to the whites and, finally, with the signing of the Treaty of Traverse des Sioux on July 23, 1851, and of the Treaty of Mendota on August 5, 1851, the last of Indian sovereignty was removed from this locality.

Long before the public domain in the Upper Mississippi country became subject to pre-emption, in 1841, the region of Houston County, because of its location and its rich basic resources, water, soil, stone and wood, had begun to attract settlers. The lumbermen were the first permanent pioneers in Minnesota, as in Iowa and Wisconsin, coming in great numbers to establish a new frontier and to lay the foundations of the first large private fortunes in the Northwest. It was not until 1850 that the true value of southeastern Minnesota for agriculture began to be appreciated and the rich, warm, sandy loam utilized. In the meantime there had been coming, and there continued to come, in rapidly increasing numbers, farmers, carpenters and artificers; lawyers, politicians and statesmen; and practitioners of medicine, from quacks, cultists, bone-setters, herb doctors and other itinerant members of the guild, to the men of the established school of regular medicine who sought permanent homes.

The pioneers came by three principal routes. Many embarked on the Mississippi River at points in Illinois which had been reached overland and traveled directly to this county; others boarded Mississippi River boats at Illinois points, disembarked in Iowa and traveled by land into Houston County; others came to La Crosse overland, in the earlier years with oxen or horses, after 1858 by rail, and crossed the Mississippi River on ferries to Houston County. Brownsville, founded in 1848, was a favorable landing spot and became a chief port of entrance for settlers who came from La Crosse or by boat from the south or from the north, for many pioneers came down the Mississippi, having penetrated from the east to St. Anthony, St. Paul and other settlements farther north. From 1851 on, a continual stream of settlers poured into the region, not only prospective Minnesotans, pioneer citizens for Houston County and other southern counties, those lying to the north and farther west, but many bound for lands beyond Minnesota's frontier.

Governor Alexander Ramsey, the first territorial governor, arrived in St. Paul on May 27, 1849. On October 27, 1849, Wabasha County was established, composed of practically all of the southern part of the present state of Minnesota, and of this huge county the territory which now is Houston County was a part. Fillmore County was created by an act of the Legislature on March 5, 1853, an act by which other counties throughout the state were created or had their boundaries altered. The lines were not definite, but the young Fillmore County comprised all of the present Houston County, nearly all of Winona County, parts of Olmsted and the present Fillmore County and a small part of the present Wabasha County. By a bill approved on February 23, 1854, the counties of Houston and Winona were created as they now exist, and new boundaries were defined for Fillmore, Wabasha and Goodhue Counties. The county seat of Houston County was first at Brownsville but on April 26, 1855, it was placed at Caledonia. The county is about twenty-four miles square and contains 334,112 acres of land.

Immigration increased, doubling and redoubling, and sites for towns and farms extended far westward. Sales of land at Brownsville-Chatfield land offices were

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heavy; in 1856 the land office was transferred entirely to Chatfield, in Fillmore County, as the tide of landseekers moved west to available territory. In this year Houston County had the following post offices: Brownsville, Caledonia, Hamilton, Hackett's Grove, Hokah, Houston, Loretta, Looneyville, La Crescent, Portland Prairie, Sheldon, Spring Grove, San Jacinto, Wiscoy and Yucatan.

The native counties of the early settlers in Houston County can be known by the names of some of the townships and settlements. Other localities were named in memory of loved towns and regions elsewhere; others for incidents, persons and topographical features; still others received or retained Indian names, and certain hills and streams bear the names of wild animals that were common in the county in its early years.

The history of Houston County is rich in stories and anecdotes of the trials and triumphs of the early settlers, and of such stories none are more interesting and moving than those which concern the experiences of the courageous pioneer physicians. Although on casual thought these pioneers appear to have lived in a romantic setting, with every opportunity for obtaining valuable lands cheap or free, and for unlimited hunting and fishing, their lives were filled with responsibility, hardship and peril. Winters were inclement. Most of the people were poor, some of them desperately so. That poverty was ever present was evidenced by the fact that throughout the county overseers of the poor were among the first officers appointed. There was little money available, commodities were few and even the most ordinary comforts were luxuries. Delinquent tax lists became long. Land, although rich, was productive only in response to intensely hard work, and when grain had been grown, mills for grinding were poor and distant and transportation difficult and slow.

The story of transportation in the county is a fascinating one. Traffic on the Mississippi River was heavy. Entrance from the east across the Mississippi was affected by ferry; the growth and decline of the ferry business in itself deserves telling. Traffic on the tributary Root River within Houston County never was great and soon was discontinued, although in the early years there was a ship-building yard at the village of Houston and for many years, beginning in 1858, a ferry was operated across the river at that point on which the rates of toll were as follows: two horses and a wagon, 25 cents; single horse or ox, 10 cents; cattle and foot passengers, 5 cents each; sheep or swine, 3 cents each.

The settlers, English, many from New England, Scotch, Irish, German, Dutch, Swedish and Norwegian, found their way into the interior from Brownsville, La Crescent and other ports of entry as best they could, hewing roadways, following Indian trails. Most of the settlers who came in the middle fifties by land brought oxen; a few had horses. As late as 1860 there were in the county 1,118 oxen and only 563 horses. Gradually came extending routes of ox carts and stage coaches, stage highways and, ultimately, railroads. The first official action toward good roads in the county was taken at the first meeting of the county board of commissioners, at Brownsville, on May 26, 1854. Various roads were projected and the viewing of others was ordered, and when roads could not be assured, cartways or unimproved trails leading from the main roads to the homes of settlers were specified. The time came that some of the settlers obstructed roads by fencing those which crossed their lands or infringed on them, so that the government was forced to order all obstructions removed and to provide for the restoration of obliterated tracks. The old territorial road from La Crosse to St. Paul crossed Houston County, through Mound Prairie. At one time three lines of stage coaches were operated over this route, and the old Lorette Hotel,

at Mound Prairie, still famous in county annals, was an important stopping place. In the heyday of stage-coach travel, in 1876, the county had daily, weekly and bi-weekly coaches departing from Brownsville and Caledonia.

The need for railroads in Houston County was apparent by 1853 and from that time constructive and increasingly successful effort was made, through the legislature and by the communities immediately concerned, to secure rail facilities for passengers and freight, and it is noteworthy that physicians were active in this effort. Although as early as 1855 the Territorial Legislature took action to establish a railroad through Houston, it was not until 1864 and 1865, after sundry reverses, that work began in earnest. Thereafter, transportation by rail progressed decade by decade until all parts of the county were reached.

With permanent white settlers came the school house, for the pioneers did not wait for governmental aid, but immediately undertook the establishment of schools, and in this undertaking, perhaps especially, were the pioneer physicians helpful. Sometimes, at first, classes were conducted in open sheds, sometimes in cabins, sometimes in a family's one room, in which case the two groups, the family in one, the pupils and the teacher in the other, were separated by an imaginary line, conceded by courtesy and established by concentration. Houston County District No. 1 was created on June 8, 1854, at the second meeting of the county supervisors. The first schoolhouse was built that year, near Caledonia, by subscription. Other districts and buildings soon followed, although because of the conditions of pioneer life, progress was slow. By 1882 definite advance was apparent. There were substantial school houses, some of them with two rooms, with relatively fine equipment: books, maps, globes and blackboards. In succeeding decades development was steady and sound. The history of expansion in all the school districts of the county and, indeed, in the districts of neighboring counties, was much the same.

Churches from the first were well represented in the county and had steady growth and influence. The Methodist Church was organized in Hokah in 1853, in Caledonia in 1854. The Swedish Baptists established a church in Houston in 1853, the first in America. The first Catholic services were held in 1855; the first Catholic Church was built in Brownsville in 1859. The Norwegian Lutheran Church of Spring Grove was organized in 1855. Presbyterian services were held in La Crescent in 1857, and the first church of this denomination was organized there in 1859. It is interesting that in accounts that have been gathered concerning the early physicians in the settlements of the county, there recurs the statement that the given physician was a member and supporter of a church, sometimes of more than one, of specified denomination.

Newspapers were sponsored early, the first of which was the *Southern Minnesota Record*, in 1855, at Brownsville. In 1859 this paper was absorbed by the *Hokah Chief (Minnesota Pioneer)* which was begun in 1856. The *Houston County Journal*, now the *Caledonia Journal*, was founded in 1865; the *Caledonia Courier* was started in 1877 and continued two years. The *Houston County Argus*, now the *Caledonia Argus*, first appeared in 1879. The *Houston Signal* was begun in 1882 as the *Houston Valley Signal*. And in 1882 also the *Spring Grove Posten* was published. Later its subscription list was assumed by the *Decorah Posten*. The *Spring Grove Weekly* followed the *Spring Grove Posten* and subsequently was taken over by the *Spring Grove Herald*. Physicians apparently were not drawn commonly into the newspaper business, for in the accounts of the early days when multiple activities on the part of the physicians were the rule, the mention of a physician-publisher of a newspaper is rare.

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At the risk of including too much material of general rather than of obviously medical interest, it may be recalled here that the panic of 1857 cast a gloom over Houston County, as over all other portions of the state. Then came the Civil War, disrupting communities and interrupting careers, but soldiers, including farmers, laborers, physicians and others returned and resumed their occupations and professions. The census of 1860, the first after the organization of the county, had given the population as 6,545; that of 1865 gave 9,792 (number of families, 1,755). The population in 1875 was 16,645. In this year there were in the county fifty-eight manufacturing establishments: shingle factories, carpenter shops, cooper shops, sawmills, corn mills, flour mills, grist mills, turning lathes, foundries and a woolen mill. There was one steam engine of five horsepower, and there were eighteen water wheels. There were soon to be in the county four large flour mills and, as evidenced by the number of water wheels, there already were grist mills, at least on the Root River and on every usable tributary creek. Coopers were in demand. The railroad shops in Hokah began operations in 1866, only to be reduced to the status of repair shops in 1872 and removed in 1880, ending the town's greatest prosperity. A census of 1879-1880 showed a decrease in population in the county to 16,339, owing chiefly to the change in local activity of the railroad.

In 1868 the Grange, known officially as the Patrons of Husbandry, was established in the state and E. McIntyre, of Houston, was the deputy appointed to organize a branch in Houston County. In the main, this rich and favored agricultural region, from boundary to boundary, offered permanent and profitable homes to the eager settlers and proved worthy of their trust and labor. Although the usual hazards of farming existed, although the grasshoppers came in 1879 and they and chinch bugs were a problem in the next few years, although there were occasional severe storms, the county was always relatively free from blights, pests and disasters, and a total crop failure was never known.

In the beginnings and growth of Houston County pioneer physicians played their part, many of them evidencing practical interest in farming, all of them furthering civic and educational betterment and applying their knowledge of healing.

### **Beginning of Medical Practice**

Unfortunately, there are available only sparse written accounts of the practitioners of medicine who came into Minnesota in the first half of the nineteenth century. It appears that many of the clerks of the early fur companies and lumber companies possessed some medical knowledge, as did the missionaries, who realized the value of ability to heal in gaining recruits to the Church. That members of the regular medical profession came into northern Minnesota in the next few decades is known, but of most of them there is a scant trace and of their professional activities little or nothing can be established; in the southern part of the state the record perhaps is a little plainer.

The announcement cards of physicians who were entering new communities in those early decades are interesting; many of them have been quoted by different writers in various articles pertaining to the history of medicine. The information set forth ranged from a simple statement of establishment of office and willingness to serve, to declarations of startling frankness as to professional attainments and to descriptions and promises couched in such flowery language as to require clarifying in the mind of the reader. By the early eighties a decline in the use of advertising by physicians had set in; even earlier, the custom of publishing business cards in newspapers had fallen into disuse, to the disappoint-

ment of an occasional publishing editor who needed the paying business and who declared that unless the people knew about doctors, the doctors could not fulfill their mission of healing.

Most of the early physicians, or practitioners of medicine, were not possessors of libraries. As one pioneer settler in Houston County has recalled, "Most of them had two or three medical books, maybe only one volume, usually Gunn's Medical Book." The man who brought with him into the new country or who thereafter assembled a library, medical or general, was an exception, and among the exceptions Dr. Giles James Sheldon, of Mound Prairie, was outstanding.

In Houston County the history of regular medicine dates from June 27, 1853, it is believed, with the coming of Dr. Giles J. Sheldon, a native of New York, to the vicinity of Wild Cat Bluff, at Brownsville, in Brownsville Township, although since at that time there were only four families in residence his practice was not immediately heavy. A man of remarkable personality, sterling character and professional skill and versatility, he entered actively into the life of the community. On May 9, 1854, as Judge Sheldon, he presided at the first court held in Brownsville. In 1856, Dr. Sheldon moved with his family to Mound Prairie Township, where he lived out his life.

For a decade and more after 1853, well-qualified physicians were scarce on the western side of the Mississippi River in Houston County. For medical services the people here as in other parts of the new territory were dependent on quacks, itinerant practitioners, bone-setters, herb doctors and the like. The standards of practice among such gentry were not high. Any one, regardless of his professional attainments, might hang out his shingle as a "doctor"; often the title was given to such a one by those whom he treated. Among practitioners of this type there undoubtedly were some who possessed human sympathy, a sincere wish to serve the sick and a natural facility in making them comfortable. Such superior members of the group used common sense in the presence of illness, could take pulse and temperature and could dress wounds. Some of them, perhaps from observing trained physicians at work, had gained a little practical knowledge of drugs and their effects. The patients who received aid from persons of this type were fortunate; those who were attended by itinerant quacks and "medicine men" were likely to fare badly.

Midwives, handling as they did in those early years the major portion of obstetrical cases, were important. From the standpoint of expense alone, they were a boon to the citizens, because although physicians' fees were low, midwives' charges were much less and midwives' services were more comprehensive. For a small amount a midwife would attend the birth, take care of the mother and the baby for a week and help with the housework. For reasons other than that of expense and, of course, of scarcity of physicians, midwives superseded medical practitioners in rural communities, at least. Owing to a mistaken Spartan belief on the part of the laity, the woman who in normal childbirth was attended by a physician was looked down upon by her neighbors as an extravagant weakling. A physician was called, therefore, only if there were serious complications at delivery beyond the confidence or power of the midwife to handle; unfortunately there were many instances in which, for lack of medical care, lives of mothers and children were lost. It is pertinent that although physicians of that time had little knowledge of antisepsis and asepsis, most midwives had less.

On the average the settlers were sturdy and except for accidents and emergencies they got along well in time of illness with the aid of friends and neighbors and such practitioners as have been mentioned. Disease took its greatest toll

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among little children, who could not be inured to the severe conditions of pioneer life.

In historical accounts of localities it is interesting that when physicians have been mentioned, it has been, as a rule, their part in the community political, agricultural, civic and educational activities that has been stressed, rather than their ability as healers or the extent and scope of their medical practice.

### **Background for Medicine in the Townships of Houston County Prior to 1900**

Among the counties of Minnesota none afforded in the middle decades of the nineteenth century a more interesting and varied region for settlement or a higher challenge to valor and effort than did Houston County, and the earliest pioneer physicians who came into the county, of many different nationalities and of as many types and degrees of professional training as of types and degrees of personal excellence, were indubitably men of courage and energy. Some, of roving spirit, came in search of new scenes; these after a time moved on, leaving slight impress. Others, of steadfast purpose, remained to help build the stable structure of organized community life and to serve the people professionally; these men found endless hard work in traveling over the countryside on foot, on horseback, in buckboard or sulky, mending the victims of the countless accidents of milling, lumbering, farming and hunting in the new communities, meeting the needs of the ill and combating as best they knew outbreaks of diphtheria, smallpox, typhoid fever and other diseases. Some had come for personal reason of frail health, in the hope of benefiting from Minnesota's salubrious climate, even then widely proclaimed, and none were more diligent and faithful than these. All found testing in the ever-present discomforts of pioneer life and adventure in its actual dangers. They have left a picture of achievement drawn on a background of townships.

In these townships the physicians had relatively wide and overlapping practices; some of them had intercounty work and even interstate calls (into neighboring Iowa). Many of them changed residence from one village to another and from one township to another as opportunity failed or offered; it should be said that some of them who followed their profession in the county prior to 1900 are living and practicing medicine, there or elsewhere, well into the twentieth century.

Although conditions of life and of medical practice throughout the county were basically the same, the townships bordering on the Mississippi River knew greater immediate fear of communicable diseases, especially the deadly Asiatic cholera, likely to be transmitted by travelers coming in on river boats, whereas the inland communities experienced special difficulties of alarms and excursions over reports that hostile Indians were coming, of attacks by wolves against livestock and even against pedestrians, of isolation, and of slow and laborious transportation of passengers and supplies over poor or nonexistent roads. As for the townships themselves, in natural features, they were then, as they are now, of rarest scenic beauty, of hill and valley, bluff and gorge, mound and cave, marsh, brook and river, sheltered field and rolling upland prairie, rich timber and luxuriant lower growth. Each township was a world in itself, worthy of chronicle for its local color, human interest and historic events, which can be only suggested here.

Because of the difficulty of presenting an acceptable narrative that would include adequate stories of all of the physicians known to have practiced medicine in Houston County from the middle decades of the nineteenth century to the turn of the twentieth century, biographical detail, whenever it is known, is reserved for the series of sketches that in alphabetical order will follow the narrative.

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In the next few pages, to serve as a roster and to identify men with their localities, the early physicians are named chronologically in the order of their appearance in townships, and the townships, except those that border on the Mississippi River, which are discussed in irregular order, are given in approximately geographical sequence from north to south in four series or rows from east to west.

*Jefferson Township* was the site of the first settlement in Houston County. The little hamlet long known as Ross's Landing, on the Mississippi, in the sloughy southeastern corner of the township, was founded in 1847 by John and Samuel Ross, who were the vanguard of pioneers soon to come. When Jefferson Township was organized, in 1858, the settlement became Jefferson Village. For many years John Ross was the only continuous resident of the village. After 1868 began a brief period of prosperity of the settlement, which then had high hope of becoming a point on the river route of the Clinton, Dubuque and Minnesota Railroad. Unfortunately, after construction of the line had been started near Jefferson, some of the local citizens demanded exorbitant sums from the company for alleged damages to property. There resulted a lawsuit which went to the supreme court, and when in 1873 the road was built, the track was laid by the river's edge, Jefferson was ignored, and New Albin, Iowa, became the local station. Jefferson's chief resource and hold on fame was its fishing industry, which in some seasons netted in single hauls from 50,000 to 100,000 pounds of marketable fish of many varieties, among them enormous catfish.

There is record of illness, of birth, of accidents and of tragic death among the early families of the little community, but not of the presence of a resident physician, regular or irregular.

*Brownsville Township*, central of the five townships of Houston County which border on the Mississippi River, was the logical approach from the east into the immediate region, as into the whole southern part of the state, and its village of Brownsville, county seat, first federal land office, and port of debarkation for immigrants and their possessions, was the gateway.

Brownsville, founded in 1848 by Job Brown, typical frontiersman of the period, was confirmed as a townsite at the last meeting of the first county board of commissioners of Houston County on October 28, 1854, at the request of Job Brown and his brother Charles, who had joined him several years earlier, although not until 1858 was the village organized officially. Job Brown probably was influenced by two facts in choosing the site: first, that it was a good natural landing and, second, that it was in the Neutral Strip, so that he would not have to pay tribute to the Indians and presumably would not be molested by the fur companies.

Wild Cat Bluff, towering 500 feet above the village of Brownsville at its foot, is the highest point on the river for many miles and it was, and is, a landmark for pilots and river boats. Issuing from its base, numerous springs, in the early years, gave ample water supply of pure water for the settlers and the debarking travelers. Brownsville, fronting the river from a narrow shelf of land twenty-five feet above the water, curves around the foot of Wild Cat Bluff, turning then slightly away from the river and upward into a ravine; to the north and south of the settlement large, low-lying tracts of land, which in floodtime in the early period were often under water, serve to emphasize the advantageous situation of the village. As to the origin of the name Wild Cat, legend has it that Job Brown (sometimes called Wild Cat Brown) having shot a wild cat and placed

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the stuffed skin in a tree near his wharf, the landing thereafter duly was known as Wild Cat Landing, and that the bluff and Wild Cat Creek, which joins the Mississippi near by, received the name at the same time.

To this picturesque spot and thronging settlement, which for years was the busiest port of entry into southern Minnesota, came traders, adventurers and solid pioneer citizens; and in the last-named group were representatives of the learned professions as well as of the crafts and of farming and business. One citizen whose name is included here from fancy rather than reason was Edward Bogan, who came from Donegal, Ireland, in the early fifties. In subscribing to an illustrated historical atlas of Minnesota, in 1874, he listed himself as "gentleman" among sundry farmers, druggists, physicians and others. Whatever his right or claim to the title, he apparently was a useful citizen, who served as judge of probate in 1858 and again in 1862.

That there were physicians among the incoming settlers is known; it is only strange that the names of so few practitioners of medicine should have appeared in the annals as permanent residents of Brownsville. As was mentioned earlier, there came in 1853, probably the first physician to settle in the county, Dr. Giles J. Sheldon, a conservative, well-educated practitioner who was lawyer, civil engineer and farmer as well, and who presently moved inland to the space and relative peace of Mound Prairie Township. Perhaps the tempo of life in the river town was more in keeping with the spirit of Dr. John B. Le Blond, a colorful and progressive figure, who arrived around 1856, when the village was not far from the height of its prosperity. Brownsville at that period had 228 inhabitants, more than twenty stores and offices, a newspaper, a theater and a bank; river traffic was heavy, the levee was crowded with goods and incoming travelers and several stage lines were operating out of the town. In 1860, appearing as an independent exponent of utilization of the great river, came young Dr. J. M. Riley, who is seen rowing a skiff down from La Crosse, cutting the strong current to beach permanently at Wild Cat Landing.

During the confused period of the Civil War, it has been said, Captain See, supposedly the possessor of medical knowledge, was in Brownsville, but only casual mention of his name could be found until, when he had been given up by the writer as almost mythical, a fortunate reference to old newspapers of Rochester, Olmsted County, of the period between 1863 and 1865, inclusive, brought evidence that established Captain See, not as a physician of Brownsville, but undoubtedly as Charles H. See, of Caledonia, Houston County, Captain and Provost Marshal of the First Congressional District and President of the Enrollment Board. Because the services of this board were important to the physicians and the laity of Houston County and of neighboring counties as well, additional comment follows.

On March 13, 1863, newspapers carried long articles giving the text of the national Conscription Act, in Section V of which it was specified that a provost marshal, with the rank, pay and emoluments of a captain of cavalry should be in each congressional district, subject to the order of a provost marshal general at Washington, D. C. In the *Rochester City Post* for May 16, 1863, there appeared the following notice:

Hon. Charles H. See, whose appointment as Provost Marshal for the 1st Congressional District of this state has established his headquarters in this city and will keep his office for the present, we learn, with J. V. Daniels on Broadway.

The several duties of a Provost Marshal, as we gather from the Conscription Act itself, are to arrest all deserters from the army wherever they may be found, and send them to the nearest military commander or post; to detect, seize and confine spies of the enemy, and

deliver them immediately for trial to the general commanding, and to carry into effect the orders and regulations of the Provost General concerning the enrolling and calling into the service the national forces.

He is also to be the president of the Board of Enrollment and is to divide the District into suitable subdistricts and appoint enrolling officers therefor and have the general supervision of the carrying into effect of the Conscription Act. Captain See is a man of much ability and the Government has made a judicious appointment of a superintendent of the draft in this Congressional District.

From time to time in succeeding issues there were notices relating to the draft in the district and to the membership of the enrollment board, which was composed of the provost marshal and two physicians. Because of recurring charges of fraud, the medical personnel was changed at different times and Captain See himself once came temporarily under suspicion. "The confusion unavoidably consequent upon an entire change of the Board has given rise to some choice specimens of talk and speculative gossip." But all that is another story.

While the subject of the enrollment board is uppermost, however, it is worth while to note that the grounds upon which applications for exemption were made were (1) alienage, (2) nonresidence, (3) unsuitableness of age and (4) manifest physical disability. To these there was added later, as announced in a notice of extension of hearings to January 4, 1864, "the election of persons where two or more members of the same family are subject to draft." The newspaper item which carried this information to the public ended cheerfully, "Come ye cripples, poor and needy—Sick and seedy, lame and sore." Editorial writers in that day were lively exponents of free speech and the freedom of the press, and a scathing paragraph was devoted to the "cripples" who presently thronged Rochester from all counties of the district, Houston and Fillmore among them, seeking exemption on the ground of physical disability, many of them having "traveled fifty miles on foot to do so." It was announced with satisfaction that only one-third or less were exempted, the applicants not receiving much favor "on the scrutinizing examination of Surgeon Mayo nor on the searing cross-examination of Captain See." But with greater feeling it was written elsewhere, "the numbers of 'manifest' cases, however, are large; and one experiences a sickening sensation after a few moments' tarry at the hospital rooms at the Provost Marshal's office."

Houston County, of course, was in the picture from the first to the last. In a little notice entitled "Draft," in the *Rochester City Post* for March 11, 1865, it was stated that "drafting took place in some towns in Houston County on Wednesday, in which seventy-eight men drew prizes with invitations to report to Captain See in this city." Captain See no doubt appeared personally in Houston County from time to time and since his immediate co-workers were physicians and since much of the work of the enrollment board had to do with consideration of applications for exemption on the basis of physical disability, it is not difficult to understand why his name should have been associated with medical practice, in Brownsville as elsewhere.

*(To be continued in August issue)*

# President's Letter

It has just been announced that the Minnesota State Fair Association has cancelled for this year the usual meeting and display at Saint Paul. This decision was certainly not made without deep regret by the management; and should this devisement, for the purpose of travel conservation, be long needed it would mark another disastrous byproduct of wholesale war. For we are a great agricultural state; and those raising foodstuffs like to show them to those who consume the surpluses. This year there would be little need for racing events or pyrotechnical displays to liven up jaded spirits. Just show the crowds a cavalcade of well-fed livestock. Lead them around to sniff the aroma of some choice firkins of butter or sides of bacon—yes, some roasting hams. The nostalgia clogs my pen and the paper blurs! And we are in a far better state as to food supplies than most of the rest of the world. It is a crime to interpose any lag in the effort to produce more and better food.

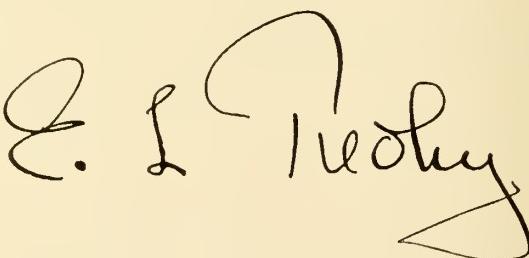
We have had to abandon our regular scientific session of the year for the same disastrous reason that the war needs come first. It is to be hoped that our various county and district societies will make unusual efforts not only to equal their usual scientific meetings but to expand them. Mr. Rosell, our efficient executive secretary, has promised to act as a clearing house for those secretaries desirous of getting outside speakers or teams to provide clinical programs of especial interest and purpose.

It is suggested that you send your requests and suggestions to our state office. By grouping your requests, itineraries may be mapped so that good programs may be brought in sequence to various centers in the state. It is planned (at this writing) to hold one meeting in Fergus Falls in late August or early September. The western and southwestern sections of the state are urged especially to consider this project as a possible war alternative in view of the many obvious inducements to limit or abandon all medical meetings. Few need be reminded that there never was a period when doctors were more in need of opportunities for a digestion of current medical, ideological and administrative problems. Many of our scientific journals are waxing as thin as the sides of beef in the butchers' coolers. There is the greatest need of word of mouth reporting.

From the Council of Medical Service and Public Relations of the AMA comes, via Joe Lawrence in Washington, an item that gives tired doctors just a little encouragement. Here it is: Senator Downey of California has introduced Senate Resolution 134. Three purposes are mentioned. First, to find out whether it is possible soon to release from the armed forces for obvious civilian needs, some medical personnel "without impairment of the war effort;" second, to speed the demobilization of medical personnel as the needs of the armed forces diminish; and third, to restudy the question of securing an adequate supply of trained medical personnel for the future.

These suggestions are made to the "Committee on Military Affairs, or any duly authorized subcommittee thereof." Let us hope that this resolution is expedited and action loudly requested. Medical men in service devoutly hope that when V-J day does come, interminable delay in separation from the service will not devolve solely upon whether total peace is devised at San Francisco, Berlin, Tokyo or anywhere else. Those who heard Stephen Baxter give his report on age levels of physicians in Minnesota before the Council and House of Delegates this year should see clearly what is happening. The cream of our members (in the middle age group) is mostly in service; the geriatric group—the virile crew that refuses to retire—is facing the same hazards and the same sort of exist as our grossly abused cars; the recruiting is too limited and militarily overweighted. Women, 4-F's, and those trained expressly for the Army or Navy cannot suffice to teach the oncoming generations of doctors or replace those in civil life adequately endowed for its needs and services.

To Wadena County chairman, Dr. John S. Grogan, go congratulations for the first county to report meeting its full quota for the Mayo memorial drive. The last half of every collection campaign is always the most difficult. Byron Shimp reports that we are well entered into the last half. Let us all push this magnificent effort to final victory.



President, Minnesota State Medical Association.

# ♦ Editorial ♦

CARL B. DRAKE, M.D., *Editor*; GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

## THE MAYO MEMORIAL CAMPAIGN

**A**S announced at the Mayo Memorial dinner given at the Coffman Memorial building at the University, June 5, the total funds pledged so far toward the erection of the Mayo Memorial building at the University Medical School in Minneapolis exceed a million and a quarter dollars. The Legislature appropriated \$750,000 and over \$500,000 has been pledged by private contributions. Although the campaign was to have come to an end July 1, the soliciting of funds will continue until the full two-million-dollar goal is reached.

It takes men with large vision to attempt large undertakings such as the proposed Mayo Memorial building. The idea was conceived by former Governor Stassen when he appointed a committee of legislators to consider ways and means to build a suitable memorial to two outstanding Minnesota citizens—the Mayo brothers. The decision to memorialize the two brothers by the construction of an additional medical building on the University campus was a happy one. We have a fine medical school, but if it is to continue to hold its place in the vanguard of medical education and to contribute to medical research, it must have expanded facilities. If our medical school is to attract the best in medical research and education and hold the outstanding men we already have, it must provide proper equipment. And as Dr. Donald J. Cowling said at the Memorial dinner, we must aim beyond the present bare necessities.

Admiral Ross T. McIntire, Surgeon General of the Navy, brought out at the Memorial dinner that medical research has come of age during the war because of necessity. Measures for preventing diseases which would otherwise have defeated our troops in various war areas have been developed. Methods have been adopted which have resulted in saving thousands of the sick and wounded. Research has made great strides in keeping fighting men fit by providing proper ventilation in the tropics, in submarines, and the holds of battleships, in determining men

with good night vision, in providing a compact apparatus for providing fresh water from sea water, and lately, in providing armour jackets as protection against fragments of shrapnel, and even low velocity bullets. He paid tribute to the valuable research conducted at the Mayo Foundation on the effects of high altitude flying and dive bombing on the human organism.

Research stimulated by the war will prove of value in the future. There is a general feeling, however, that prewar research, not only in medicine but in other scientific lines, has been backward. The proposed Mayo Memorial will provide the space and equipment for an expansion of medical research at the medical school.

Contributions are tax-exempt and should be made payable to the Mayo Memorial Fund and sent to 1126 Northwestern Bank Building, Minneapolis 2. Pledges may be made payable any time before December 31, 1946.

## A MORE FARSIGHTED POLICY FOR MEDICINE AND OTHER SCIENCES

**T**HE mobilization of the manpower of the country has been a stupendous task. The results of the all-out war effort have so far been cause for some satisfaction and self-congratulation. There has been some criticism, however, that some of the legal limitations of the Manpower Commission have been shortsighted. It is stated that England succeeded in minimizing interruption in the training of the young men who will be her scientific teachers and leaders in the next generation. In Russia, students of ability in science were not put in the armed forces. In our country there has been an all-out policy counting on a short war, and while thousands of young scientists have been delegated to war work, no provision has been made for the continuation of peacetime scientific research. The scientific schools have been largely stripped of their professors and students. A recent editorial in the *Saturday Evening Post* contends that more than

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15,000 chemists and chemical engineers are now in the armed services doing work having no relation to their abilities. Similar criticisms have been made that too many farms have been deprived of young men who would have been of more service on the farms. It must be admitted that it is easy to criticize. War is an extravagant waste, and the greatest tragedy of war is the sacrifice of young men of outstanding ability.

In the medical field, we have remonstrated against the failure to exempt from military service the few thousand young men who were contemplating studying medicine and who would be needed to keep the medical schools filled. Since July 1, 1944 only young women and draftees classified as 4F have been allowed to take up pre-medical studies. The medical schools, as a result, will suffer from a lack of students, and in a few years the hospitals will lack sufficient interns so essential to hospital care. There is good reason to believe that there will also be a dearth of physicians to meet postwar needs. Similarly, the scientific schools are suffering from reduced classes, and science will suffer from the termination of postgraduate scientific study. After the war and after these young scientists return from war work or service, there is danger that new family responsibilities and lack of funds may prevent them from resuming their studies for doctorate degrees. Their efforts in war work, as a rule, will be of little value in the peace economy.

Anticipating this undesirable situation, efforts are being made to encourage young doctors and former young students of the natural and social sciences to resume their former studies so as to assure a sufficient supply of material for teaching positions and research work. The Rockefeller Foundation has provided funds for fellowships in twenty-one of the leading medical schools for a limited number of bright young medical graduates to supply teaching and research positions. The Foundation has made similar provision for postgraduate work in the natural and social sciences and in literature. This Foundation can provide, of course, for only a small fraction of the need; doubtless other foundations and universities will be able to provide additional fellowships.

While the war has not been won, it would seem reasonable that Congress should modify its regulations so as to permit the medical schools to be filled and young scientists to gradually resume their scientific studies. This more farsighted pol-

icy is of importance in the future economy of the nation.

## SOCIAL SECURITY AMENDMENTS OF 1945

ON May 24, Senators Wagner and Murray introduced in the Senate a bill entitled The Social Security Amendments of 1945 (somehow the title suggests Follies of 1945), and simultaneously Representative Dingell introduced the same bill in the House. A detailed analysis of the bill appears in the Medical Economics section of this issue.

A perusal of the bill or the analysis shows that most of life's hazards are provided for. The bill supplants provision for hazards already cared for and adds others, notably compulsory health insurance. We note no provision for funds for medical care of the indigent, as the unemployed are not insured. As hospital care for those insured is limited to sixty days, with 120 days if the fund can afford it, the tragedy and expense of chronic illness requiring hospital care is not covered.

The Bill provides that a patient may choose his own doctor from among those who have voluntarily agreed to take part in the insurance plan. A doctor is not forced to participate in the plan, and even if he does may refuse to treat a patient. Doctors may even choose how they are to be paid, fulltime, parttime, or on a fee schedule. Designated specialists will be allowed special fees. These provisions are evidently intended to appease the medical profession which has insisted on the importance of free choice of physician.

Funds for the transaction of this stupendous project are to be in the nature of the state subsidies and loans up to 75 per cent of costs in the less prosperous states. The federal government will obtain its funds for the project from a 4 per cent tax on the wages of employes and a 4 per cent tax paid by employers. The self employed will pay a 5 per cent tax on their earnings up to \$3,600. According to Senator Wagner, these payments are in the nature of contributions—not taxes. What's in a name? The funds so raised will admittedly not be sufficient, but the additional amount will come out of general government funds, obtained, we presume, likewise not from taxes but from contributions.

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Senator Wagner estimates this should amount eventually to one-third of the total cost to the federal government. If that portion provided by the general funds is not sufficient, presumably more will be provided. And it should be noted that these billions of dollars will provide state subsidies and loans for about 50 per cent of the total cost, the balance to be provided by state taxes. In other words, these "contributions" of employe and employer will provide about a third of the total costs, if the Bill is enacted.

We are assured by Senator Wagner that this is not State Medicine. In our opinion, it is not only federal control of medicine but federal subsidy of many activities which should be either state or personal responsibilities.

While Senator Wagner states he has the approval of physicians of some of the provisions of the bill, organized medicine has not been consulted. The Hill-Burton Bill providing for a national survey of hospital facilities and funds for hospital construction, when the need can be shown and control of the hospitals placed in the hands of the local communities, has the approval in principle of the AMA and is sponsored by the American Hospital Association. Most so-called private hospitals have been possible through private donations but are the property of the community. It would seem that future construction will have to rely on government funds to a large degree.

We note that recently a bill was introduced in Congress for Federal subsidy for lunches for undernourished children. This important need is already being met in many localities, and is a local, not federal, responsibility. Another recently introduced bill provides for a payment to parents of \$500 for the first child, \$250 for subsequent children, up to \$1000 total. Is the bringing of children into the world a personal or national responsibility?

Evidently there is in Washington an element bent on instituting an all-out socialistic form of government with bureaucracy rampant. Do we want it?

### EMIC ACTIVITIES

"Three-quarters of a million servicemen's wives and infants received care under the emergency maternity and infant-care program in the first two years of its operation," Dr. Martha M. Eliot, associate chief of the Children's Bureau, United States Department of Labor, reported on March 18 on the second anniversary of pas-

sage by Congress of the first specific appropriation for the purpose.† The "stork bill" now totals close to \$70,000,000, Dr. Eliot said, with "Uncle Sam paying doctor and hospital bills for approximately one baby out of every six being born these days."

Dr. Eliot estimates that under the emergency maternity and infant care program close to half a million babies have already been born and almost two hundred thousand are on their way, with medical, hospital, and nursing care being provided for their mothers during pregnancy, childbirth, and for six weeks after childbirth. In addition, some seventy-five thousand sick infants have been cared for. Infants are eligible for care throughout their first year of life.

All this care has been provided without cost to the serviceman or his family, Dr. Eliot pointed out. Not infrequently health officials, doctors, and nurses have gone to great lengths to get care to those in need. She paid tribute to the generous co-operation of the physicians who have given unstintedly of their time and strength when they have been hard pressed by wartime practice. Thousands of physicians and hospitals the country over have helped make this program a success, Dr. Eliot asserted.

Emphasizing that the program is a war measure only, Dr. Eliot said that nevertheless the "very magnitude of the undertaking, providing as it does for these tens of thousands of mothers and babies everywhere in the country, under all sorts of circumstances, cannot be without its long-term effects." All who have had a part in getting this care to this large segment of the population, she said, have learned must about what is involved in making good maternity and infant care available to the whole population.

With few exceptions the program is now operating smoothly everywhere in the country, and the Children's Bureau foresees its continued wartime operation until "care has been given the last eligible mother and infant." The program terminates six months after the end of the war, but care being given to the serviceman's wife or baby at that time will be completed.—Current Editorial Comment, *New York State Journal of Medicine*, July 1, 1945.

†U. S. Department of Labor, Children's Bureau News Release, March 18, 1945.

*Correction.*—The heading appearing on Page 473 of the June number of MINNESOTA MEDICINE should have read *Minneapolis Surgical Society* instead of Minnesota Academy of Medicine. The two papers published on Pages 473 and 474 were presented at the meeting of the Minneapolis Surgical Society held January 4, 1945.

Down through the centuries the common law has recognized the maintenance of the common health as one of the great tasks of society.—WENDELL BERGE, Assistant Attorney-General, *U. S. Pub. Health Reports*, January 5, 1945.

# MEDICAL ECONOMICS

Edited by the Committee on Medical Economics

of the

Minnesota State Medical Association

George Earl, M.D., Chairman

## NEW WAGNER-MURRAY-DINGELL BILL

A new program of cradle-to-the-grave security is before Congress with the introduction on May 24 of the Wagner-Murray-Dingell Bill, 1945 version. The measure designated S. 1050 was referred in the Senate to the Committee on Finance, of which Senator George of Georgia is chairman. Introduced into the House of Representatives as H. R. 3293, it was referred to the House Committee on Ways and Means, which is under the chairmanship of Representative Doughton of North Carolina.

### Omnibus Social Security

The bill is designed to cover all phases of social insurance. It levies a direct tax of 8 per cent shared alike by employe and employer on all wages and salaries of all workers in private employment up to \$3,600 of annual earnings, and a direct tax of 5 per cent on the earnings of all self-employed people up to \$3,600 per year.

It is estimated that this tax would produce each year a fund in excess of Eight Billion Dollars. Yet nowhere, in all of the 185 pages of text, does the term "tax" appear except with reference to refunds prior to 1946 and to make records conform to sections of the Internal Revenue Code. The term "Social Security Contributions" is substituted instead.

Health insurance is to be provided for everybody. Hospital care will be provided for at least sixty days a year. Unemployment benefits will be paid for twenty-six weeks after a one-week waiting period. Size of benefits will be \$5 to \$20 weekly for single persons, up to \$30 a week for married persons with dependents. Old age insurance benefits will be increased and coverage broadened. Present maximum benefits of \$85 monthly, under the plan, are to rise to \$120. Minimum benefits, now \$10, will be increased to

\$20 a month. Farmers, professional people, small businessmen, government workers, domestic workers will be brought into the old-age system for an estimated 15 million additional persons who are not now covered. Women will be permitted to retire at sixty instead of sixty-five. Widow's benefits will start at sixty, also.

Mothers and children will get special health and welfare service through State systems of aid, supported in part by federal government grants. Federal government will increase its aid and step up its standards in a wide variety of fields of social service for needy individuals, carried out through state governments.

Employment service will be nationalized and expanded.

### Various Groups Consulted

Collected into this one bill, according to Senator Wagner's speech before Congress at the time of its presentation, are most of the suggestions and proposals for social security legislation propounded by many organizations and persons, "including the American Federation of Labor, the Congress of Industrial Organizations, the Physicians Forum, the Committee on Physicians for the Improvement of Medical Care, the National Catholic Welfare Conference, the American Hospital Association, the American Public Health Association, the National Lawyers Guild, the American Public Welfare Association, the American Nurses' Association, the National Organization for Public Health Nursing, the National Farmers Union and the American Foundation for the Blind."

To quote Senator Wagner: "The health provisions of the bill have the endorsements of many persons and organizations working in medical care and related fields. Legislation providing grants for hospital construction has been endorsed by the American Medical Association,

the American Public Health Association and various labor, welfare, farm and other public organizations."

While Senator Wagner points out that he has consulted various organizations in obtaining suggestions for modification of his previous bill, he has not consulted with the American Medical Association, or as far as is known, with any of the members of its representative bodies or councils, according to statements released by that Association.

The Physicians Forum to which he refers is a group of several hundred physicians, practically all living in New York City. The Committee of Physicians for the Improvement of Medical Care, once known as the Committee of 400, now maintains a mailing list of around 1,000 physicians and is actually controlled by an inner group of a few physicians who do not in any way represent a majority of medical opinion. Thus the bill completely disregards the majority opinion of the 125,000 physicians who constitute the American Medical Association and who provide the major portion of medical practice for the people of the United States.

#### Ten Sections Under the Bill

The current proposals under the 185 page bill are divided into ten sections as follows:

*Section 1.* Short title is: Social Security Amendments of 1945.

*Sections 2 and 3. Grants and Loans for Hospital and Health-Center Construction.*

This section provides for a 10-year program to build, improve and enlarge hospitals and health centers as needed, especially in rural communities, and areas where facilities are overtaxed as a consequence of the war and where the need for additional facilities is likely to continue.

It would take over the proposals of the Hill-Burton bill and make of it a ten-year program at ten times the cost. In other words, there will be \$950,000,000 of federal loans and grants to states, counties, cities and nonprofit organizations of which \$50,000,000 is for the fiscal year 1946 and \$100,000,000 for each of the nine succeeding years, to be matched on a sliding-scale formula by those getting federal money. At the end of ten years, if the plan works out, there will be about two billion dollars worth of new hospitals and health centers.

The program is to be administered by the Surgeon General of the Public Health Service, with the assistance of the Federal Works Agency, on construction matters.

Loans are to be repaid within twenty years, are limited to the hospitals that receive grants, and may not exceed 25 per cent of the cost of the project. Grants for construction projects are to be based upon the per capita income of each State compared to the average for the United States, and shall be for not less than 25 per cent nor more than 50 per cent of the cost of the project, exclusive of the cost of the site. Any balances at the end of the tenth year, and loans, as they are repaid, revert to the Treasury.

#### Section 4. Grants to States for Public Health Services

This section amends section 314 of the Public Health Service act. It proposes to extend the present grants for venereal disease and for the tuberculosis program by authorizing the appropriation for each fiscal year of a sum sufficient to carry out the purposes of the program.

The subsections dealing with public health work are revised and the present authorization of \$20,000,000 a year for grants to states, is revised to provide for the appropriation of a sum "sufficient to carry out the purposes of this section."

The annual amount available to the Surgeon General for demonstrations, training of personnel and administrative expenses is increased from three million to five million dollars a year.

The amounts of the grants to states are determined by an explicit formula, designed to give more aid to the poorer states and relatively less to the richer states.

#### Section 5. Grants to States for Maternal and Child Health and Welfare Services.

A common plan is followed in each of the three parts, dealing respectively with maternal and child health, crippled children and child welfare. In order to receive federal grants, the states are to develop their own plans, in accordance with their own needs. These are to be approved by the chief of the Children's Bureau. Here, also, the federal grants would be on a variable basis, so as to give special aid to the poorer states, ranging from 25 to 75 per cent of the total public funds expended under the approved state programs.

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### *Section 6. Grants to States for Public Assistance*

This section provides federal grants to states for assistance to all needy persons, authorizing federal matching for money payments to the aged, dependent children, the blind and other needy individuals.

The bill requires that as a condition for receiving federal grants, states must not impose as a condition of eligibility for assistance under the plan any citizenship or residence requirements. The contention is that under the revised program the largest part of the total cost will come from federal funds and therefore, all persons in the United States who are actually determined to be needy by state agencies, should be given assistance irrespective of state or county residence or inability to prove citizenship.

The bill provides that there be one state agency and also only one local agency to administer all assistance in each locality.

### *Sections 7 and 8. A National System of Public Employment Offices*

This section provides for an expanded national system of public employment offices established in the Social Security Board, in the words of Senator Wagner, "to bring together available workers and available jobs in the maximum use of the nation's productive facilities and manpower."

Provision is made for the establishment of a National Advisory Employment Service Policy Council for the purpose of formulating policies, reviewing administrative operations, and discussing problems relating to the Employment Service.

*Sections 9 and 10. National Social Insurance System in 8 parts:* (A) Prepaid Medical Care Insurance; (B) Unemployment and Temporary Disability Insurance; (C) Retirement, Survivors and Extended Disability Insurance; (D) National Insurance Trust Fund; (E) Credit established based on \$160 wages for each month of military service; (F) Extends coverage to about 15 million now not included in social security program; (G) Social Insurance "contribution rates"; (H) General Provisions.

This is followed by Section 10 which contains general definitions.

Section 9, however, more particularly, Part A, is of greatest interest to the medical profession.

Social and health insurance is to be provided for everybody. To pay for all security offered, the planners recommend the following "social insurance contributions" be imposed:

	Employer %	Employee %	Total %
1. Retirement survivors' and extended disability insurance .....	1.0	1.0	2.0
2. Medical care and hospitalization insurance .....	1.5	1.5	3.0
3. Unemployment insurance..	1.0	1.0	2.0
4. Temporary disability insurance .....	.5	.5	1.0
Total contributions.....	4.0	4.0	8.0

The word "tax" is carefully avoided. Explained Senator Wagner in its presentation: "I do not believe that social security and health legislation should be considered as a tax matter. I think that social security legislation should be handled on its merits as social legislation. Social insurance contributions are premiums for insurance protection—not general taxes for paying the expenses of Government."

### *Decreased Rate Explained*

The fact that the total "contribution rate" provided in this bill is 8 per cent as compared with 12 per cent in his former bill, is explained thus by Senator Wagner. In the first instance, the proposed total unemployment insurance rate has been reduced from 4 to 2 per cent because the unemployment trust fund being built up under existing legislation has continued to grow so that it is now much larger than it was when the previous bill was introduced. By January 1, 1946, it is estimated that unemployment reserves will total about 7 billion dollars. Therefore, says Senator Wagner, there is no longer any question that there will be ample funds to finance unemployment benefits during the immediate post-war period.

While it is true, the 2 per cent now provided in the bill would cover current costs at our present high-level of employment, what of meeting the costs when there are larger unemployment averages over the years?

In the second instance, the combined retirement, survivors and extended disability "contribution rate" has been reduced from 4 to 2 per cent in accordance with the recent act of Congress in freezing for the fourth time the existing rate of 2 per cent.

Senator Wagner frankly admits that it will be necessary, a few years after the war, to increase this rate or provide a government subsidy to make up the expected deficit.

It is generally agreed that old-age benefit costs are sure to soar—perhaps to quintuple in twenty years; for more and more people are building up benefit rights, and, proportionately, our population is getting older.

Under any such plan of broad social security such as Senator Wagner proposes, two alternatives are presented: Either we can gear current taxes to current costs and have both increase over the years—or we can raise more in taxes than we pay in costs in order to build a reserve for a later day. The former, selected by the proponents of this legislation, perhaps appeared to be more palatable for current consumption.

#### *Physician-Patient Relationship*

In presenting this portion of the bill to Congress, Senator Wagner scrupulously pointed out that under sub-section A providing medical and hospital insurance "the freedom of medical practice is carefully safeguarded." Said he: "Each insured person is entitled to choose his own doctor from among all physicians or groups of physicians in the community who have voluntarily agreed to go into the insurance system."

It is significant to note that the term "compulsory" appears in no place in the releases made available by Senator Wagner to explain the contents of his bill and to construe its provisions. Rather he places emphasis on the contention that the legislation will not interfere with the normal relationship between the patient and his physician and on the point of view that the health insurance provisions will not be mandatory on the medical profession. However, the direct proposals under the bill nullify these blandishments.

#### *What Choice?*

It proposes that the "Surgeon General shall publish and otherwise make known in each local area to individuals entitled to benefit the names of medical and dental practitioners and groups of practitioners who have agreed to furnish services as benefits . . . and to make such lists of names readily available to individuals entitled to benefits." What choice, other than signing up, is there left to a doctor?

#### *Proposed Method of Administration*

All provisions center tremendous authority in the hands of the Surgeon General who is "authorized and directed to take all necessary and practical steps to arrange for Personal Health Service Benefits for all Social Security beneficiaries and their dependents" for an estimated 135,000,000 people.

These benefits include general medical, special medical, general dental, special dental, home nursing, laboratory and hospitalization benefits.

There is provided a National Advisory Medical Policy Council of sixteen members to be appointed by the Surgeon General from panels of names submitted by professional and other organizations concerned with medical services, education and hospitals and to include also a representative of the public. These members are to be appointed without regard to Civil Service Laws and subject to the approval of the Federal Security Administrator. However, this council is wholly advisory and without authority.

The Bill states that the methods of administration shall insure the prompt and efficient care of individuals, promote personal relationships between physician and patient, provide incentives for professional advancement and encourage high standards in the quality of service. These are worthy objectives. They will be quoted endlessly by proponents of this legislation and by those who strive to establish centralized controls in the United States.

#### **AMA Urges Study**

The American Medical Association, in its *Journal* of June 2, 1945, in commenting on the bill, urged that physicians obtain copies of the proposed act so that they might study carefully all its provisions to see for themselves the extent to which it would revolutionize and socialize medical care in the United States.

#### **Editorial Comment in General**

Quoting *The Journal of the American Medical Association* of June 2, 1945, again, among the first of the editorial comments to appear relative to the program for expanded social security was that of the *New York Times*, published on May 26.

The *Times* says that certain questions are to be asked of any proposal like the Wagner-Murray-Dingell Bill. "Will it provide relief where

it is needed without producing it where it is not needed? Will it mitigate the penalties for failure or misfortune without weakening the incentives to production and success? Will it provide aid to individuals without making them politically dependent and without dangerously extending the power of the central government?"

To these questions the *Times* replies that under the Bill, as it stands, it is more than doubtful whether these questions can be answered satisfactorily.

Available information indicates that hearings on the Bill will not be held for some time. Congress will be slow to give the country all of this plan as it is probably too much to take in one piece, and will take plenty of time for analysis and study. To date press comment generally has not been overenthusiastic for the bill—in fact most of it, including some of the labor press, has been critical.

## MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

J. F. DU BOIS, M.D., Secretary

**Minneapolis Woman Pleads Guilty to Illegal Practice of Healing**

Re: State of Minnesota vs. Marjorie J. Blatzheim.

On June 5, 1945, Marjorie J. Blatzheim, twenty-nine years of age, 2115 Third Ave. South, Minneapolis, entered a plea of guilty to an information charging her with practicing healing without a basic science certificate. The defendant, who holds no license to practice any form of healing in Minnesota, was sentenced by the Hon. W. W. Bardwell, Judge of the District Court of Hennepin County, to a term of one year in the Minneapolis Workhouse, which sentence was suspended on recommendation of the attorney for the Minnesota Board of Medical Examiners, and the defendant placed on probation for one year.

The defendant was arrested June 1, 1945, following an investigation by the Minneapolis Police Department and the Minnesota State Board of Medical Examiners, in which it was learned that the defendant had offered to perform a criminal abortion for a fee of \$200. The defendant was arrested before she had a chance to perform the abortion. At the time of the defendant's arrest, police officers found a speculum in the defendant's purse, hidden on the back porch of the house at 2115 Third Avenue South. The defendant admitted that she had just purchased the speculum at a hospital supply house in Minneapolis and that she had also attempted to purchase catheters to be used in performing abortions. Upon being questioned as to the source of her knowledge of doing criminal abortions the defendant stated that she had obtained the information from a Minneapolis man who has two previous convictions for felonies and who has been in the Minneapolis Workhouse on two occasions in the past year for violating the medical laws of Minnesota.

## In Memoriam

### HERMAN A. H. BOUMAN

Dr. Herman A. H. Bouman, prominent Minneapolis surgeon, died Monday, June 18, 1945 of a heart attack, at the age of seventy-five.

Born in Germany and educated in elementary schools there, he came to America with his family at the age of twenty and settled in Clara City, Minnesota. He attended the University of Minnesota medical school, graduating in 1897.

Dr. Bouman taught anatomy and physical diagnosis at the University four years. Later he practiced surgery and medicine in Richmond, Minnesota, four years.

In 1910-1911 he studied in Switzerland, specializing in treatment of thyroid. He then returned to private practice in Minneapolis.

Dr. Boumann was a fellow in the American College of Surgeons and a member of the Minnesota Academy of Medicine. He was also a member of the Hennepin County Medical Society, the Minnesota State Medical Association and the American Medical Association.

Dr. Boumann was chairman of the board of directors of St. Andrews Hospital and an honorary member of the staff of Northwestern Hospital. He prepared numerous articles for MINNESOTA MEDICINE and various surgical journals.

In 1903, he married Kirsten Peterson, Webster, S. D., who died in 1940. In 1944 he married Matilda Menzel, who survives him. Surviving also is a daughter, Mrs. F. A. Zinter, Minneapolis, and three brothers, the Rev. Henry Bouman, Minneapolis; Klas, Miles City, Montana, and Bernhard, Great Neck, New York.

### WARREN MAYNARD DODGE

Dr. W. M. Dodge of Farmington died April 28, 1945, at the Miller Hospital, St. Paul, at the age of seventy-eight.

He was the son of Dr. L. P. Dodge of Farmington, and was born November 19, 1866, at Farmington. He graduated from the Farmington High School in 1885 and received a B.S. degree from the University of Minnesota in 1890 and his M.D. degree also from the University in 1893. He began practicing in Farmington in 1893 and practiced there continuously until a year ago when his health began to fail.

Dr. Dodge was married to Myra Warden, a Farmington High School teacher from Hanover, New Hampshire, in July, 1893. She died in 1929. He married Inez McGraham, a former school teacher in Farmington in 1930, and she survives him. He is also survived by a daughter, Mrs. August Kulstad of Farmington; a son Dr. W. M. Dodge, Jr., of Battle Creek, Michigan, and a brother, Dr. Albert A. Dodge of Kalispell, Montana.

Dr. Dodge was active in civic affairs. He had been mayor of Farmington, a member of the village council and school board, an elder in the Presbyterian church, and a past master of Corinthian Lodge, AF and AM.

# Minnesota Academy of Medicine

Meeting of March 14, 1945

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, March 14, 1945. Dinner was served at 7 o'clock and the meeting was called to order at 8:10 by the President, Dr. A. G. Schulze.

There were forty-nine members present.

In order to allow the Essayist of the evening as much time as possible, a motion was carried that the reading of the minutes of the February meeting be dispensed with.

The scientific program followed.

## Etiology of Primary Hypertension

E. T. BELL, M.D.

Minneapolis, Minnesota

Dr. Bell, of the University of Minnesota, gave the paper of the evening on the above subject. Lantern slides were shown.

The meeting was adjourned.

J. A. LEPAK, Secretary.

Meeting of April 11, 1945

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, April 11, 1945. Dinner was served at 7 o'clock and the meeting was called to order at 8:10 by the President, Dr. A. G. Schulze.

There were fifty-five members and one guest present.

Minutes of the March meeting were read and approved.

Upon ballot the following men were elected as candidates for membership in the Academy:

Dr. Jas. K. Anderson, Minneapolis  
Dr. Logan Leven, Saint Paul.

The scientific program followed.

## ADENOMYOSIS, ENDOMETRIOSIS AND CYSTOMYOMA

### Report of a Case

LEE W. BARRY, M.D.  
Saint Paul, Minnesota

Mrs. C. A. J., aged thirty, consulted me in September, 1944, because of severe pain in the left side of her pelvis accompanied with polyhypermennorrhea. This pain began three months before her marriage in 1938 and had increased in severity. The polyhypermennorrhea had begun four months previous to her visit to me. Dyspareunia caused the patient to separate from her husband four years ago. Shortly before leaving her husband, she bled profusely and was curetted for a suspected incomplete abortion. The curettings, however, showed no evidence of pregnancy.

At the time the patient consulted me her blood pressure was 115/75. Her hemoglobin was 70 per cent (11.7 gms.). The external genitalia, vagina and cervix were normal. The uterus was twice normal size, in second degree retroversion, and adherent in the cul-de-sac. A fibroid about three centimeters in diameter was palpated on the left side of the fundus at the level

of the cervical-corporeal junction. Another much larger fibroid projected from the top of the fundus of the uterus. There was marked induration in the posterior vaginal vault and considerable spasm of the uterosacral ligaments. Due to extreme tenderness, the ovaries and tubes were not palpable.

Because of profuse uterine bleeding from December 15 to December 20, 1944, accompanied by an increase of the pelvic pain, an operation was advised. A pelvic laparotomy was done January 11, 1945. Upon opening the peritoneal cavity, the uterus was found to contain two fibroids, and was fixed in the cul-de-sac by dense adhesions. Both ovaries were about four times normal size and each contained a large tarry cyst. The peritoneum over the bladder and the round ligaments were studded with small endometriotic lesions. There was considerable endometriotic induration of the cul-de-sac and the sigmoid at the rectosigmoidal junction. The ovaries, tubes and uterus were freed from the cul-de-sac and a supravaginal hysterectomy and bilateral salpingo-oophorectomy was carried out. The raw surface was peritonealized by suturing the round ligaments and the peritoneum above the bladder into the cul-de-sac below the stump of the cervix. The appendix was normal and was not removed. The operation consumed one hour and eleven minutes. The patient had an uneventful convalescence and left the hospital on the tenth postoperative day.

A pelvic examination six weeks after the operation disclosed no tenderness or induration in the cul-de-sac or vaginal vault. The patient complained of mild hot flashes, for which a daily dose of 0.25 mgm. diethylstilbestrol was prescribed.

Following is the pathological report of the specimens removed:

*Gross.*—The specimen consists of an irregular uterine mass minus the cervix and both adnexae. The uterus, itself, is about 5 cm. in length and 4 by 3 cm. at the fundus. The endometrium is somewhat increased in amount. Near the cervix is a fibroid about 2½ cm. in diameter. There is a larger fibroid arising from and contiguous with the fundus. This is about 8 cm. long and 5 by 5 cm. On sectioning the tumor, there is an irregular cavity, somewhat compressed, about 3 cm. in length

## MINNESOTA ACADEMY OF MEDICINE

on the surface. This is surrounded by the usual myomatous tissue and contains a brownish material. The tubes appear normal. Both of the ovaries are enlarged and cystic and have several hemorrhagic cysts containing chocolate brown material.

*Microscopic.*—The tumor at the fundus consists of interlacing bundles of smooth muscle fibers in a dense connective tissue stroma. There is a large cystic space within the tumor. This is lined by multiple layers of epithelium which rest on a loose endometrial stroma. The endometrium is moderately thickened due to diffuse edema and irregular tortuous glands lined by pseudopapillary secreting columnar epithelium. The myometrium is somewhat edematous. The ovary is diffusely edematous and congested and has several cysts. Some of the larger cysts are lined by a vascular granulation tissue showing infiltration of many pigment-laden, so-called pseudo-xanthoma cells and some lymphocytes and plasma cells. The remainder of the ovarian tissue appears diffusely fibrous. The tube shows edema and congestion of the mucosa.

*Diagnosis.*—Multiple fibromyomas of the uterus; fibro-adenomyoma; endometrial cysts of the ovary.

(Signed) KANO IKEDA.

At the request of Dr. Ikeda, Dr. Robert Meyer carefully examined the gross specimen and microscopical sections of the larger myoma. This tumor contained endometrial-cell-lined spaces which were apparently connected with the endometrium of the uterine cavity. Due to the fact that these endometrial cells did not invade the wall of the myoma (so characteristic in adenomyosis interna), Dr. Meyer considered this a cystomyoma. Cystomyomata are rare, not more than a score or so having been reported. They may originate from the uterus, from the wolffian body or have an entirely indeterminate source.

From the above pathological report it is evident that the patient was suffering from a combination of endometriosis, cystomyoma and myomata. Myomata accompany adenomyosis interna and endometriosis in about 80 per cent of the cases.

One encounters various forms of adenomyosis and endometriosis in from 10 to 20 per cent of pelvic laparotomies. Adenomyosis of the uterus occurs in three different forms, namely: adenomyosis interna, adenomyosis externa and salpingitis isthmica nodosum.

The histogenesis of adenomyosis interna has been definitely proved. The uterine musculature is invaded by the uterine glands and stroma cells of the basal layer of the uterine endometrium. Proliferation of the uterine musculature is stimulated by these invading cells and their stroma. This invasion may result in either a diffuse or discrete enlargement of the uterine wall. These discrete enlargements are usually moderate in size. They may, however, grow as large as a newborn baby's head. On palpation there is no way of differentiating them from uterine myomata.

Adenomyosis externa is due to invasion of the uterine wall from without by endometrial cells. The uterine musculature reacts to this invasion with the production of nodules which are usually smaller than those of adenomyosis interna. Similar adenomyotic nodules may develop on the round and the uterosacral ligaments. Endometriosis of the ovary occurs in three different forms, namely: adenomyosis, superficial surface lesions and tarry cysts. The first, adenomyosis, is extremely rare, while the latter two occur with comparative frequency.

Unlike adenomyosis interna, the histogenesis of endometriosis has not been definitely proved. In 1921 Sampson introduced the implantation theory. This was

to the effect that living endometrial cells and their stroma were regurgitated through the fallopian tubes during menstruation, implanting themselves upon the ovaries and pelvic peritoneum.

The serosal theory of endometriosis is warmly supported by Robert Meyer and Emil Novak. They believe that the mesothelial cells of the pelvic peritoneum through some hormonal influence are capable of differentiating *in situ*, into endometrial glands and stroma.

Halban and Sampson, working independently, have propagated the theory that in certain cases endometrial cells are transported by the blood or lymph stream to the pelvis and distant parts of the body. In this way they explain the occurrence of endometriosis in the labia, the perineum, thighs and arms.

The symptomatology of the case reported by me is definitely characteristic of endometriosis, namely:

1. Age of incidence of pain, between age of twenty-three and the menopause.
2. Abnormal menstruation, polyhypermennorrhea.
3. Sterility.
4. Dyspareunia.
5. Secondary dysmenorrhea.
6. One-sided pain.

Objectively an adherent retroversion of the uterus combined with painful induration of the cul-de-sac and uterosacral spasm pointed strongly to an extensive pelvic endometriosis.

In the treatment of endometriosis it must be clearly recognized that endometriosis is a disease process dependent upon ovarian function. As long as this function persists, the disease will progress leading at times to destructive involvement of all the organs contained within the pelvic cavity. Removal of the ovaries results in a cessation of all the invasive processes with oftentimes a gradual but surprising return of the involved tissues to a nearly normal state. Extensive endometrial involvement of the bladder, sigmoid, rectum or small intestine may need no further treatment other than bilateral oophorectomy and time to effect a cure. Withdrawal of ovarian stimulation usually results in atrophy and almost complete disappearance of large endometrial infiltrated areas.

In certain cases of large ovarian endometriomas, and in the presence of dense adhesions, removal of all the ovarian tissue may be neither feasible nor possible. In such circumstances menopausal doses of x-ray have been followed with excellent results.

An attempt should be made to conserve the child-bearing function in the milder cases of endometriosis. In this group are found the small ovarian adenomas and ovarian implants. These can be cured by simple excision.

In the above reported case the presence of large tarry cysts in both ovaries combined with marked endometrial invasion of the cul-de-sac and rectosigmoidal junction made bilateral oophorectomy the treatment of choice. The useless uterus containing the cystomyoma and

(Continued on Page 592)



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myoma was removed to facilitate adequate peritonization of the raw surface.

I greatly appreciate the help given me in this case by Dr. Robert Meyer and Dr. Kano Ikeda.

---

### THE SURGICAL MANAGEMENT OF CEREBRAL ANEURYSMS

#### With Special Reference to Arteriovenous Fistulae Between Internal Carotid Artery and the Cavernous Sinus

A. W. ADSON, M.D.  
Rochester, Minnesota

Dr. Adson, of Rochester, gave a talk and lantern-slide demonstration on the above subject.

The meeting was adjourned.

J. A. LEPAK, M.D., *Secretary.*

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## WOMAN'S AUXILIARY

MRS. ANTHONY J. BIANCO, *President*  
Duluth, Minnesota

MRS. ROYAL V. SHERMAN, *Editor*  
Red Wing, Minnesota

---

### ANNUAL REPORT OF THE PRESIDENT

Today marks our twenty-third year as a State Auxiliary to the Minnesota State Medical Association. Looking over our history, I was interested to find that the first county medical auxiliary in America was founded when forty women met in Minneapolis to organize an auxiliary to the Hennepin County Medical Society. That was on October 7, 1910—thirty-five years ago. I am sure that if some of the original forty were here today to hear the splendid reports that have been given by officers, county presidents, and chairmen of committees, they would marvel at the mighty organization that is still growing and flourishing from their early and tenderly cared for seed. Looking back, and reviewing the progress we have made, I am sure they would feel a sense of pride in our accomplishments.

I shall not elaborate on the work of the various chairmen, as their inspiring reports and intelligent efforts speak for themselves. It is interesting to note the achievements of the county presidents and gratifying to know that all our members are doing war work in some form or other. Now that V-E Day has come and gone, we must realize that the struggle is not over, but that the real battle for the end of the war has just begun. I am sure the thoughts and efforts of each member of the Auxiliary is now concentrated on how

we may help to win the war, speed the peace, and help to build a better world for the future.

During the past year, many of our members have been doing Red Cross work, making dressings for the Cancer Home in Saint Paul, collecting medical and surgical supplies, promoting friendliness among members, having public relations meetings and teas, helping their husbands in their offices (some as former nurses, and some as general office workers), paying the dues of members whose husbands are in the service, giving subscriptions to *Hygeia* to schools and public institutions, and sponsoring the Christmas Seal Contest. This contest originated in Minnesota in 1931 and has attracted national attention. These projects are essential to the war effort, and now that the end is in sight, we must redouble our efforts along these lines.

During the past year I had the pleasure of attending two national board meetings in Chicago, where many problems of great interest were discussed by all attending members. Your president was also selected to serve on the national recommendations committee. I have also attended several county auxiliary meetings, and I regret that travel conditions prevented my attending more. In the future, I recommend that about six regional meetings be held with the president throughout her term of office. In this manner all counties would be contacted and problems peculiar to each could be discussed. Travel restrictions, because of the war, would thus have no bearing on necessary meetings.

To my successor, Mrs. E. V. Goltz, I extend my best wishes for a pleasant and successful year. I hope she will derive as much pleasure from being your president, as I have during this past year.

No words are adequate to express my innermost feelings and thanks to all the officers, county presidents, and chairmen of standing committees. You have been most willing and eager to co-operate in helping to make the year a happy one for me. I wish also to thank my advisory council and advisory committee. Your friendly letters and helpful suggestions have been greatly appreciated. You have been like the good friend that offers to walk home a short distance with one in the dark, and then ends up by *going all the way!*

Respectfully submitted,

AMY WALSH BIANCO.

---

### MOWER COUNTY

Members of the Auxiliary to the Mower County Medical Society entertained their husbands at a 7 o'clock dinner, May 28, at the Fox Hotel, Austin. Covers were laid for twenty-two members and guests.

Major and Mrs. P. C. Leck of Spokane, Washington, Dr. and Mrs. G. J. Schottler of Dexter and Dr. A. E. Henslin of LeRoy were out-of-town guests.

A short business meeting was conducted, and following dinner bridge was played, Mrs. G. E. Hertel and Major Leck winning prizes. Mrs. H. B. Allen and Mrs. P. A. Lommen were in charge of arrangements.

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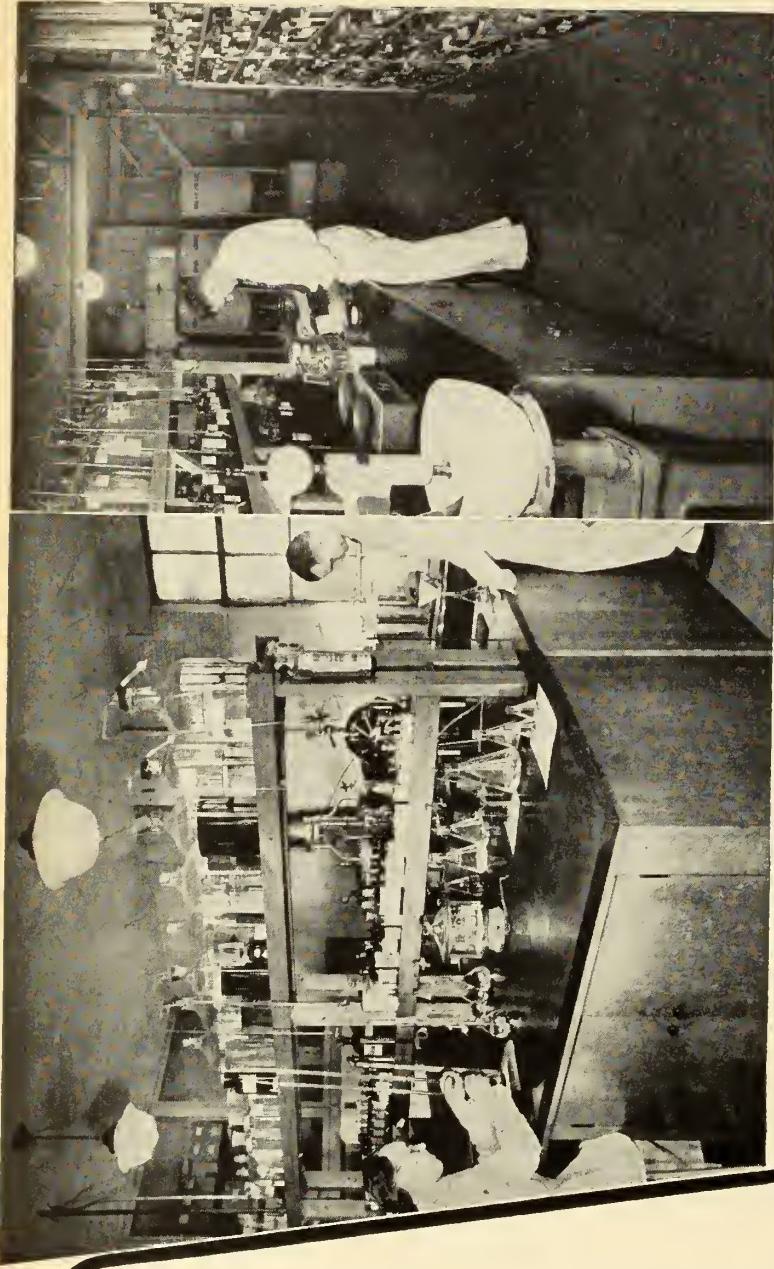
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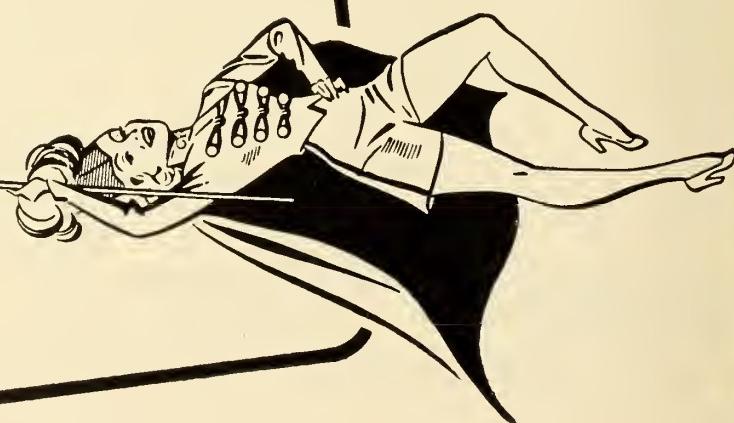
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# ♦ Of General Interest ♦

Dr. Rodney F. Kendall opened his office at 1160 Lowry Medical Arts Building, Saint Paul, on July 2, 1945, for the practice of dermatology and syphilology.

\* \* \*

Captain William E. Wellman, of Virginia City, is on duty at Fort Snelling, after a year's service in the South Pacific Area.

\* \* \*

Promotion of Dr. Charles W. Mayo, Rochester, to full colonel in the army medical corps was announced in the Minneapolis *Morning Tribune* on May 18.

\* \* \*

Dr. Walter D. Broadie, of St. Paul, has been commissioned a lieutenant commander in the Navy and has been on hospital duty in Chicago since May 22.

\* \* \*

Dr. M. I. Hauge, of Clarkfield, joined the staff of the Montevideo Hospital on May 1, following the closing of the Clarkfield Hospital because of shortage of help.

\* \* \*

Dr. George Eusterman, Mayo Clinic, was guest lecturer at the Annual Postgraduate Meeting of the University of Michigan at Ann Arbor, the last week of May.

Commissioned a lieutenant (jg) in the Navy, since he entered practice at Grove City on April 10, Dr. Kenneth Kelley has closed his offices there and reported for duty at the Great Lakes Naval Training Station.

\* \* \*

Dr. E. J. Tanquist is general chairman of Minnesota's Twenty-Fourth Annual Resorts Golf Tournament, to be held in Alexandria, August 1 to 5. According to the announcement received from the Alexandria Golf Club, this is the finest golf course in the country; grass greens—watered fairways—and all!—Why not vacation at Alexandria?

\* \* \*

Dr. C. W. Moberg is chairman of the committee appointed by the Detroit Lakes Civic and Commerce Association to promote their locality as the site for the new state institution for the feeble-minded now being planned.

\* \* \*

Dr. J. Grafton Love, of the Mayo Clinic, was a guest speaker at the Annual Clinic Day of the Alumni of Wayne University, College of Medicine, in Detroit, Michigan. "Protruded Intervertebral Disks" was the subject of Dr. Love's address.

\* \* \*

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charge, Dr. George A. Williamson, formerly of St. Paul, has opened offices in Phoenix, Arizona, and will specialize in orthopedics. Dr. Williamson expects to remain permanently in Phoenix.

\* \* \*

The appointment of Dr. Thomas G. Wellman to a captaincy has been announced by the War Department. Captain Wellman, who formerly practiced at Lake City and Virginia City, is stationed at the Stuttgart Army Air Field, Stuttgart, Arkansas. He has been in service since February, 1943.

\* \* \*

Lieutenant William Walter Wood, Jr., graduate of the University of Minnesota Medical School, Class of 1937, is now attached to the Naval Hospital at Shoemaker, California, following twenty-one months of service in the South Pacific area. He is the son of Dr. W. W. Wood, of the Jamestown Clinic, Jamestown, North Dakota.

\* \* \*

Dr. Cecil J. Watson, professor of medicine at the University of Minnesota, has been appointed on the advisory council of the Life Insurance Medical Research Fund which has been established by the Life Insurance Association of America for research in diseases of the heart and arteries.

\* \* \*

The Croix-de-Guerre, coveted French decoration, has been presented to Major Ralph W. Wise, a former fellow in surgery at the Mayo Foundation. The accompanying citation read in part: "For exceptional services of war, rendered during the course of the operations involving the liberation of France." Major Wise, a group flight surgeon of the 279th bomb group, also holds the Bronze Star Medal, awarded for meritorious achievement.

\* \* \*

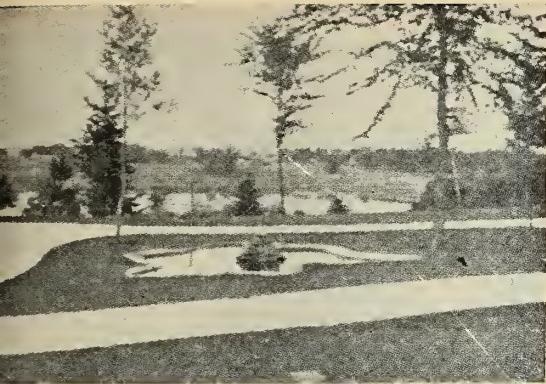
Shortage of physicians was the excuse offered by the New York Legislature for the passage of two bills during the past session which would have permitted licensing graduates of any medical school in the United States. Fortunately, however, Governor Thomas L. Dewey vetoed both bills, thus preventing undermining of the high educational standards which the profession has sponsored and valiantly maintained for so many years.

\* \* \*

The tuberculosis sanatorium conducted by the Metropolitan Life Insurance Company for their employees at Mount McGregor, New York, since 1913, will be closed permanently in September. During its operation the sanatorium has cared for more than 500 patients, but the decline in tuberculosis is such that the maintenance of so large an institution is no longer practical. Hereafter, the company will have its tuberculous employees cared for in sanatoriums near their homes.

\* \* \*

Dr. Helen W. Bane is now practicing in Brainerd, where she is associated with Dr. George Halliday with offices in the Baehr Building. After her graduation



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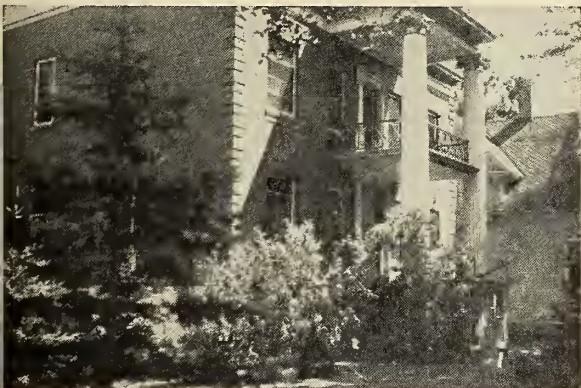
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from the University of Minnesota, Dr. Bane interned at the Medical Center in Jersey City, N. J. She also had a residency at the Franklin County Hospital at Farmington, Maine, and practiced medicine for three years in Beloit, Wisconsin. Later she was associated with the Jackson Clinic in Madison, Wisconsin. Dr. Bane's parents are residents of Brainerd.

\* \* \*

Majors Luther H. Wolff, Gordon F. Madding and Hugh F. Swingle, former fellows in surgery at the Mayo Foundation, have been especially commended for outstanding performance of duties by the Commanding Officer of the 2nd Auxiliary Surgical Group. The three surgeons, who were in charge of the general surgical teams functioning in priority surgical hospitals, participated in the North African, Sicilian, Italian, French and German campaigns.

\* \* \*

In a broadcast from Osaka, Japan, on May 1, 1945, Captain James K. Keeley, formerly of the Mayo Clinic, reported that he is doing medical work there. Captain Keeley, who has been a prisoner of war since 1942, said that he had been transferred from Davao, Mindanao, to Osaka in June, 1944, and that he has had no news of his family. Messages limited to twenty-four words may be sent to him. His address is Captain James K. Keeley, United States Prisoner of War, Osaka Camp, Japan, via New York.

Members of the Carver County Medical Association were hosts at a testimonial dinner at the Minneapolis Automobile Club on June 5, in honor of Dr. William Phillips, Jordan, Dr. W. H. Reiter, Shakopee, Dr. H. E. Wunder, Mudeura, and Dr. E. E. Novak, New Prague. The occasion marked the completion by all four physicians of fifty years, or more, of service to their separate communities.

Dr. Phillips, who is a graduate of the University of Minnesota, 1894, was again honored on the following Sunday at a "Phillips' Day" picnic and program in Jordan.

#### HOSPITAL NEWS

The Marshall Hospital, buildings and equipment valued at between \$50,000 and \$60,000, was transferred to the Louis Weiner Memorial Hospital, Inc., by Drs. F. D. Gray and B. C. Ford on May 17, effecting an important step in the new hospital plans. The Weiner Memorial Association has signed a contract with Ellerbe and Company, St. Paul architects, who do all the Mayo Clinic Buildings. Construction work on the new hospital will begin as soon as materials are available. Pending construction, hospital service will be maintained at the Marshall Hospital. The new hospital, which will be a memorial to the late Louis Weiner, Marshall produce dealer, will cost \$150,000. It will be open to all accredited doctors,



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The Willmar State Hospital entertained the four sub-committees of the Kandiyohi County Nursing Service on May 15. About fifty members attended the meeting which was addressed by the superintendent, Dr. S. B. Lindley, who spoke on the importance of adequate hospital service to the community. At the present time the Willmar Hospital houses 1,400 patients.

\* \* \*

Forty-three years of efficient and faithful service were terminated when William Crane retired as steward of the St. Peter State Hospital on May 18. During that time Mr. Crane had served under three different superintendents. Dr. H. A. Tomlinson was the first, then Dr. R. M. Phelps, and the present superintendent, Dr. George H. Freeman.

Born at Fort Wingate, New Mexico, in 1875, where his father, an Indian agent, had traveled from Minnesota via covered wagon for ninety-nine days, the pioneer strain was strong in William Crane. After his father's death during an Indian uprising in 1877, his widowed mother traveled with her five children in covered wagon to Denver, then to Winona by train, where Mr. Crane lived until he went to work at St. Peter in 1902.

During his years of stewardship Mr. Crane has seen many changes. At first all the farm work and haul-

ing were done by oxen, and there was only one building for both patients and executive offices.

Mr. Crane will make his home with his wife and children—Paul, recently released from military service on a medical discharge, and Lucille and Esther.

\* \* \*

According to information released by the Veterans' Administration in Washington, ground will be broken for the construction of the new \$420,000 administration building at the Veterans' Hospital in Minneapolis as soon as the contracts have been let, which should be in the near future. This is the first unit in the expansion program for the hospital, which also includes conversion of the present two-story-and-basement administration building to hospital service with accommodation for 200 additional beds, and construction of a 300-bed surgical building. Completion of the work will increase total bed capacity to 1200. On an average basis of eight patients per bed annually, it will be possible to care for approximately 10,000 during the year.

Clinic services will be established in downtown Saint Paul, Minneapolis, and Duluth, as soon as equipment and professional staffs are available. About forty-five branch and contact offices will be opened in the larger cities of the State, with doctors in each locality retained by the Veterans' Administration for examination and treatment of veterans on a fee basis. Surveys for housing for this purpose are now under way, and one such office is already in operation in Virginia.

## REPORTS and ANNOUNCEMENTS

AMERICAN CONGRESS  
OF PHYSICAL MEDICINE

The annual scientific and clinical session for 1945 of the American Congress of Physical Medicine has been cancelled. This meeting was to have been held in New York City, September 5 to 8, 1945.

\* \* \*

SECOND LASKER AWARDS FOR FERTILITY  
RESEARCH AND MATERNAL CARE

For the second successive year, two \$500 Lasker awards will be given through the Planned Parenthood Federation of America, Inc. for significant contribution to the improvement of maternal health care and for research in human fertility.

The two Albert and Mary Lasker Foundation awards were announced today by Dr. J. H. J. Upham, chairman of the Federation's National Medical Advisory Council, who said: "We still know less about the science of reproduction than the science of mechanized warfare, and health care for pregnant mothers, in many parts of the country, is still fifty years behind medical knowledge."

The awards will be as follows:

1. To the scientist making the most significant contribution in research in human fertility—either in the control of conception or in the correction of infertility.
2. To the public health service in a state or community for meritorious action in developing a complete program of maternal health care, including child spacing. The individual recipient of the award will be the executive officer most responsible for the development of the program.

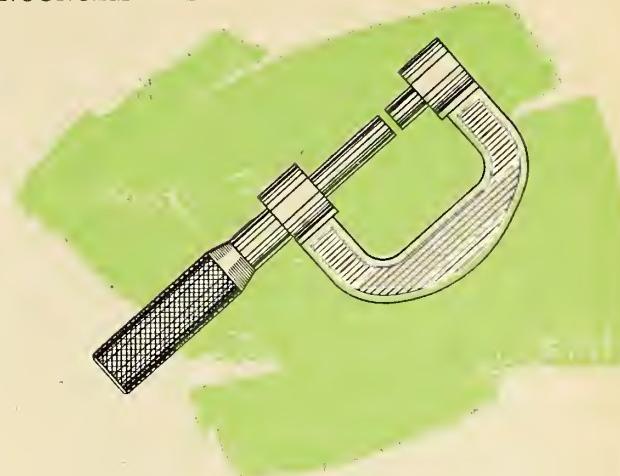
The fertility award will be given in honor of the late Dr. Hannah M. Stone, first medical director of the Margaret Sanger Research Bureau, co-author of the famous "Marriage Manual."

The public health award will be in honor of Mrs. Margaret Sanger, founder of the birth control movement and at present honorary chairman of the Federation.

The awards will be presented at the Annual Dinner of the Planned Parenthood Federation of America in New York in January, 1946. Deadline for submission of entries for the awards will be December 1, 1945. Members of the Federation's Medical Committee headed by Dr. Richard N. Pierson of New York, will serve as judges.

Two similar awards were presented last January to Dr. John MacLeod of the Department of Anatomy, Cornell University Medical College and to Dr. Felix J. Underwood, executive office of the Mississippi State Board of Health.

Any individual wishing to qualify for the awards, or to suggest the name of a scientist, physician or public health official who might do so, should address the Medical Committee, Planned Parenthood Federation of America, 501 Madison Avenue, New York 22, N. Y.



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## BOOK REVIEWS

### BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

**RYPINS' MEDICAL LICENSURE EXAMINATIONS.** Topical Summaries, Questions and Answers, Fifth Edition. Editorial direction of Walter L. Biering, M.D., F.A.C.P., M.R.C.P., Edin. (Hon.) Member, National Board of Medical Examiners; Secretary, Federation of State Medical Boards of the United States. 546 pages. Price, \$6.00, cloth. Philadelphia: J. B. Lippincott Co., 1945.

**MEN UNDER STRESS. (In and After Combat).** Lt. Col. Roy Grinker, MC, Army Air Forces. Formerly Fellow of the Rockefeller Foundation and Chairman of the Department of Neuropsychiatry, Michael Rees Hospital, Chicago; and Major John P. Spiegel, MC, Army Air Forces, formerly of the Department of Psychiatry, Michael Reese Hospital, Chicago. 484 Pages. Price, \$5.00, cloth. Philadelphia: Blakiston Co., 1945.

**THE MANAGEMENT OF OBSTETRIC DIFFICULTIES.** Paul Titus, M.D. Obstetrician and Gynecologist to St. Margaret Hospital, Pittsburgh; Consulting Obstetrician and Gynecologist to Pittsburgh City Homes and Hospital, Mayview, and to the Homestead Hospital, Homestead, Pa.; Secretary of American Board of Obstetrics and Gynecology; Commander (MC) USNR, attached to Professional Division, Bureau of Medicine and Surgery, Navy De-

partment, Washington, D. C. 1000 pages. Illus. Price, \$10.00, cloth. St. Louis: C. V. Mosby Co., 1945.

**A SYNOPSIS OF MEDICINE.** Eighth Edition. Sir Henry Letheby Tidy, K.B.E., M.A., M.D., B.Ch. (Oxon), F.R.C.P. (Lond). Extra Physician to H. M. the King; Consulting Physician to St. Thomas' Hospital, Hon. Major General, Lately Consulting Physician to the British Army. 1215 pages. Price \$7.50, cloth. Baltimore: Williams & Wilkins Co., 1945.

**COMMON AILMENTS OF MAN.** Edited by Morris Fishbein, M.D. 177 pages. Price, \$1.00, cloth. Garden City: Garden City Publishing Co., 1945.

**SEGMENTAL NEURALGIA IN PAINFUL SYNDROMES.** Bernard Judovitch and William Bates. 312 Pages. Illus. \$5.00. Philadelphia: Davis, 1944.

This work represents the combined efforts of a neurologist and a surgeon in the analysis and the interpretation of painful syndromes, encountered at various segmental levels of the body. Among the more common etiologic factors are infections, trauma, postural defects and spinal arthritis. After outlining methods of examination, the authors discuss "Posture in Relation to Abdominal Pain and Tenderness and Ptosis of the Abdominal Organs." This is followed by a brief outline of treatment, including removal of focal infection, postural correction, mechanical supports, physical therapy, drug therapy and nerve block—therapeutic measures which are useful in most types of neuralgia. Description of the dermatomes is accompanied by nu-



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merous illustrations showing the sensory distribution of spinal nerves, as determined by several different authorities.

Clinical pictures which are discussed include brachial plexus pain, the scalenus anticus syndrome, pain and tenderness of the chest wall, abdominal pain, abdominal scars and adhesions, low back pain and lower quadrant abdominal pain, sciatic nerve pain, herpes zoster and occipital neuralgia. One chapter on trigeminal neuralgia is written by Dr. Robert Groff.

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Two chapters are devoted to a description of the technique of paravertebral injections of spinal nerves and one chapter to paravertebral infiltration of the sympathetic ganglia.

After reading this book, relating the extensive investigations of the authors, one is led to believe that it is relatively simple to diagnose and treat the different clinical pictures which are described as segmental neuralgia. It is likely that difficulties will be encountered in the practical application of the principles which are set forth. The clinician who is willing to make a thorough study of the book, and also of his patients, will derive considerable help in solving many of his problems. It is likely to be confusing to those who insist on an accurate description of the pathologic conditions which are responsible for the clinical syndromes.

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## BOOK REVIEWS

### EIGHTEENTH ANNIVERSARY ISSUE OF THE HEBREW MEDICAL JOURNAL

Volume I, 1945, eighteenth anniversary issue of the *Harofe Haivri* (The Hebrew Medical Journal), edited by Moses Einhorn, M.D., has just made its appearance. This special issue is dedicated to the late Henrietta Szold, distinguished humanist and Zionist, who harnessed American Jewish womanhood in a great organization, Hadassah, which is responsible for the vast network of medical and sanitary installations in Palestine, making it the outstanding health center of the whole of the Middle East.

Mrs. Rose G. Jacobs, an intimate friend and co-worker, who was president of Hadassah for five years, presents a very interesting article entitled "Henrietta Szold's Contribution to the Health of the Body and Soul of Palestine;" Mrs. Tamar De Sola Pool, also former president of Hadassah for four years, gives a detailed account of the life and work of Miss Szold.

Dr. S. R. Kagan contributes an article of particular interest on the contribution of the pioneer physicians to the growth and development of the Zionist movement throughout the world. Since the Middle Ages the Jewish physician has exerted great influence on the communal life of Israel.

There is also a detailed English section containing summaries and translations of all the articles for those readers who do not understand Hebrew.

Copies of this issue may be obtained from the editorial office of *The Hebrew Medical Journal*, 983 Park Avenue, New York 28, New York.

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I have just recently been placed on the "inactive" list of Army Officers, having spent 18 months in General Eisenhower's Hqs. in Africa, and also several months convalescing in Walter Reed General Hospital in Washington.

I have established a special department here to handle all employee and employer needs for doctors, hospitals, clinics, etc. I urge all doctors and hospitals needing competent medical help, and all nurses, dietitians, technicians, medical secretaries, record librarians, etc., who need positions, to contact me as soon as possible.

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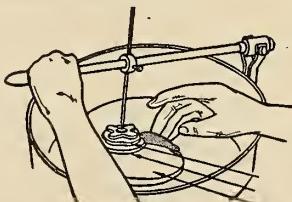
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## CORRESPONDENCE

27 May 1945

Gentlemen:

Although I have not had the opportunity to practice medicine for the past four years, I like to keep in touch with MINNESOTA MEDICINE. Though most issues catch up with me somewhat late, it is still a pleasure to get them.

After considerable moving around through England and France with the 217th General Hospital (as executive officer) I was transferred as an instructor to the Disarmament School in London. Later I found myself on the Enemy War Materiels Branch, G-4 SHAEF, and have now finally become settled on the Hospitalization Sub-Section of Demobilization Branch of our Control Council. Here I am thrown together with some of the Army's top-notch planners and policy makers and, though somewhat removed from the practice of medicine in Minnesota, it has proved very interesting. Contrary to a good many expressions in the U. S. press, the Army has a very well worked out plan for the occupation and de-Nazification of Germany. The demobilization of the German Wehrmacht went into effect according to plan within three days after surrender. The plans for care of displaced people and the repatriation of allied prisoners of war were in effect long before that, and it looks to me like the Army is doing a pretty good job.

Very truly yours,

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## MULTIPLE MALIGNANT ARGENTAFFIN (OR CARCINOID) TUMOR

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### References

1. Dockerty, M. B., and Ashburn, Frank: Carcinoid tumors (so-called) of the small bowel. *Arch. Surg.*, 47:221-246, (Sept.) 1943.
2. Gold, R. I., and Grayzel, D. M.: Multiple argentaffinomas in ileum with metastasis in lymph nodes and liver. *Am. J. Surg.*, 60:144-148 (Apr.) 1943.
3. Korkosz, August: Multiple argentaffinoma of the ileocecal valve. *Gastroenterol.*, 1:961-964, (Oct.) 1940.
4. Pennington, R. E., and Priestly, J. T.: Multiple carcinoid tumors of the small intestine. *Proc. Staff Meet. Mayo Clinic*, 18: No. 4 (Feb. 24), 1943.
5. Watz, C. E.: Case presentation: Multiple carcinoids of the small bowel. Midway Hospital Staff Meeting, Saint Paul, Minnesota, June 22, 1944.

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# Minnesota Medicine

*Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society*

Volume 28

August, 1945

No. 8

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AUGUST, 1945

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# MINNESOTA MEDICINE

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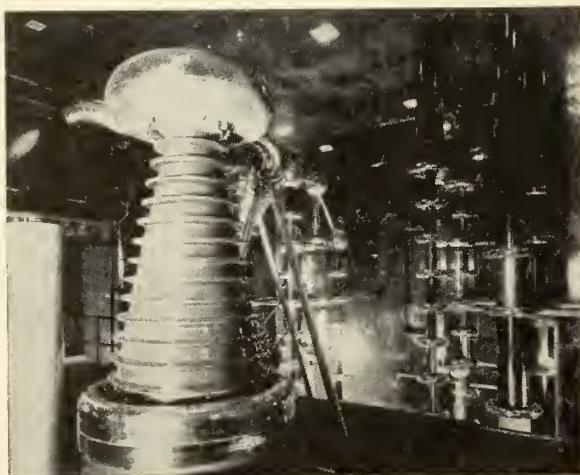
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Volume 28

August, 1945

No. 8

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## **PRESIDENTIAL MESSAGE TO THE HOUSE OF DELEGATES OF THE MINNESOTA STATE MEDICAL ASSOCIATION**

**EDWARD L. TUOHY, B.A., M.D., F.A.C.P.**

Duluth, Minnesota

A HEAVY responsibility and an unusual opportunity face me in reporting to you the current progress of our association and outlining a few of the problems we face.

Our association is well established and guided. If I were to imply that any member of this association would make an adequate president so long as its executive secretary, Mr. R. R. Rosell, Dr. L. L. Sogge and Mr. Manley Brist are at the helm, I would deprecate the fine work of the many preceding presidents and councilors who have been invaluable instrumentalities in its up-building. Your past presidents continue from year to year to attend the council meetings, often at personal sacrifice.

To men like Ben Souster and Bill Condit goes especial credit for careful accounting; and also, to L. A. Buie and his advisors, for judicious investment of funds. As we can see by the reports that are presented to us by our executive-secretary and his office personnel, we have a most efficient centralized administrative staff. As your president, I have observed it in the period of legislative bee-hiving and have the highest commendation for its co-operation and efficiency.

Our association has retained its essential democracy. As I have joined in deliberations of the councilors, it has occasionally impressed me that more direct decisions could be made by bypassing some of the time-consuming deliberations of committees. But these give all concerned a

chance to mold and devise the ultimate policies. The efficient plan whereby the various committees and subcommittees have been regrouped, provides a coherent court of continuous inquiry into the many essential details that comprise the ultimate purpose of our association. The chairmen of these various committees construe for the councilors the well-considered digest of judgment that ultimately becomes our policies. This is democracy in action.

### **Cancellation of Scientific Program**

This is the first time in our history that we have been unable to hold an annual scientific session. We are most unfortunate because the program committee had arranged a brilliant session. Earlier in the year we had hoped that Washington might change its ruling and permit us to have a later session, but that hope is gone because our national transportation problem, with the war centering in the Far East, has become more critical than ever. As you know, Mr. Rosell had already arranged with many exhibitors for this annual session, and the income involved that we stand to lose might have made a greater difference had there not been built up, wisely and farsightedly, considerable invested funds.

### **Medicine Stands Well in Minnesota**

We can all be justly proud of the high standards that our profession has set in Minnesota. Our association has maintained scientific sessions in connection with our annual meetings that are

Delivered at the banquet for the House of Delegates May 19, 1945.

recognized for their excellence the country over. There is much evidence in the reports of our committees, which are well worth reading by every member, of the constructive efforts that our association puts forth to accomplish that which should be our common purpose: to promote the science and art of medicine and the betterment of public health.

Our association pioneered, back in 1939, in the field of disseminating and briefing the latest scientific information for our doctors by the institution of our subject-of-the-month packets, comprised of scientific papers prepared by experts on timely subjects. These have since been used as a model in other states. We have one of the finest state medical journals published within our country.

We shall have an opportunity, during this session, to hear the report of Dr. J. F. Du Bois, Secretary of the State Board of Medical Examiners, in which will be detailed what has been done to protect the profession and our own licensure by lessening within our state the menace of low grade medicine, cultism and quackery. The judicious service rendered by this Board in the essential field of keeping straight the records of those entitled to practice the healing art, and also keeping some of our own recalcitrant brethren from indulging in unethical and unworthy practices are worthy of much commendation. Likewise the efficient co-ordination of services that characterizes the State Board of Examiners in the Basic Sciences under the direction of Dr. J. C. McKinley deserves commendable mention.

Dr. A. J. Chesley, Secretary of the Minnesota State Board of Health, deserves much praise not only for his efficient handling of the public health problems of our state, but also for his fine spirit of co-operation with our medical profession.

Our Medical School at the University of Minnesota under Dr. Harold S. Diehl is one of the outstanding medical institutions in the country.

Our basic science law has become noteworthy throughout the United States and many inquiries come in for information as to its method of operation. For some seeking licensure here it may seem to work unnecessary hardship. As between some states, there perhaps should be more reciprocity. Without quarreling with the cults, our basic science law and its application has

helped to reform them and to rescue some such prospective devotees from the disasters of half-baked education.

Yes, medicine stands well in Minnesota, and we pledge our best efforts to retain its position and leadership.

### **Our Critics and Our Defense**

Nevertheless, we are in a defensive position and our critics are numerous. You are too familiar with these matters of controversy and criticism to make detailed review necessary. Few of our critics claim that organized medicine has failed in its technical advances and accomplishments. Rather is criticism reflected in legislative action offered to overcome what are called inequities in distribution of medical service to certain groups of our population, and to spread the cost of illness by some prepayment plan for service, at least among low income groups.

Longer life spans, geriatric degenerative disorders, in contrast to pediatric control of communicable illnesses, and many other economic and social developments, have greatly altered our public and professional relationship.

The cost of medical and hospital care is a burden for many legitimately needing it and for countless others who think they do. Medical service is as popular as cars and refrigerators; it has not been rationed. Greatly overworked doctors and overloaded hospitals point up the background for calm readjustment and judicious legislative action.

In Minnesota, we are in the midst of meeting this issue along the lines of the several states already in the field. Dr. A. W. Adson and his committee deserve a great deal of credit for the splendid way in which they have grappled with the problem here. The last legislature gave us the desired Enabling Act and the Committee on Organization, which will be selected here before this House of Delegates session adjourns, will use all possible foresight to give us a forthright plan, definitely under the guidance of our profession.

### **Two Kinds of Critics**

Before discussing that issue, however, permit me to call attention to the circumstance that, through all ages, medicine has had what we may call friendly, but caustic, critics: Voltaire, George Bernard Shaw, Leo Tolstoy—men of the greatest mental perception and understanding. Then we

have the numerous garden variety of "potato bug" critics, speaking or writing from their peculiar personal assortment of emotional conflicts and personal ambitions. From recent experiences, I choose two illustrations: the one of the friendly and essentially reasonable critic; and the other, quite the reverse.

*"A Delightfully Friendly Critic."*—You all know who Charles Franklin Kettering of General Motors fame is. You hear him on many Sunday broadcasts during the intermission of the New York Philharmonic orchestra. You should think of him every time you start your car. He represents not only a delightfully friendly critic but he epitomizes that alertness, ingenuity and inventive genius which we now claim as a war-winning prerogative born of American genius.

At a recent meeting of the presidents of the seventeen North Central and Northeastern state medical societies and of the society of the District of Columbia summoned to Detroit to discuss pre-payment medical service plans, he retold, for our benefit, his splendid tale of adventure in bringing down from thirty-five days to two hours the time needed to completely paint an automobile. The story is too long to retell here, but in essence it had scores of poignant applications to the attitudes we assume toward fixed routines and, particularly, our development of objective methods for diagnosis and treatment—the part of medical service the public expects, loves and demands.

The regular paint people told him that he was crazy when he said that a reduction from thirty-five days to twenty-one in the painting of cars would be of no help at all in mass production. He clearly established his sanity when, with the aid of the Du Ponts, he modified a gadget maker's finishing fluid used in his small shop over in Jersey City to coat over some souvenirs, and they called it "duco."

But the point I particularly wish to make here is this: Kettering, some time previously, had a physical examination that required two weeks. He is convinced that largely through methods of instrumentation, electronic estimates of body fluids, et cetera, the period in which he hung around under the greatest of constraint and uncertainty might be reduced from two weeks to two hours! I am inclined to agree with him, if he would always present himself with some ailment or situation that is obviously organic, fairly well es-

tablished within his system, and can be ascertained to be the cause of whatsoever complaint harasses him at the moment.

It is evident that "Ket" is not at all familiar with that turmoil of the consciousness and that array of functional conflicts that are so much a part of modern medical practice and that are such an extraordinary source of the cost of medical service, because it is in that domain that so much of our energies is spent lest we overlook the early stages of cancer, or heart failure, or whatever it may happen to be.

Two months, not to say two hours, are inadequate to appraise, adjust or cure the psychoneurotics. I grant that they are distressed, and they will flood any and all hospital space available even as they do the veterans administration facilities. Ill-advised surgery abounds with these because many doctors refuse to believe that living sane, ethical, orderly lives is one essential for physiological serenity. Men like Kettering are in superb physiological and intellectual adjustment.

*A Professional Propagandist.*—For the other type of critic, I present some observations by Waldemar Kaempffert.\* After lambasting the American Medical Association and calling loudly for reform of our guild, this author pulls out all the stops with outrageous demands that we shall accept bureaucratic grouping in some such form as *he* claims has worked out so admirably in Germany, Holland, Sweden and Great Britain. He states: "The A.M.A. has still to explain why some twelve million men in the armed forces are admittedly receiving the best medical and surgical care without benefit of free choice." He concedes, and is even willing to grant to the A.M.A., some credit for making our doctors the best in the world, but he overlooks how they attained that position, and proceeds to proclaim the advantages of what *he* observes in a visit to "the hospitals maintained by the Veterans' Bureau, by the Army and Navy, and by the states and municipalities."

He, with other emotional critics, believes that our vaunted individualism and the patient's right to seek the physician of his own choice is largely a menace to public health and efficiency. He puts it this way for his plan: "If such a system of public medicine were instituted, we should rely

\*"What About it, Doctor?" *Tomorrow*, Vol. IV, p. 5, May, 1945.

largely on medical centers of the type proposed by Surgeon General Parran, Senator Claude Pepper and others. By a 'medical center' is meant . . . an institution in which all the medical specialties are represented . . . where is available the pooled attention of half a dozen or more men, in which the proved diagnostic and therapeutic aids are found. That old wheeze 'medicine is an art as well as a science' would go by the board. We want less art and more science in medicine; more cardiograms and less chest thumping, and listening to internal swishes and gurgles; more urine analysis and blood chemistry and less divination; more x-ray examinations and less assumption that all is not well with the chest."

Here is a gesture by a professional propagandist, interested in something to write about that will challenge the eye of a surfeited reading public. Through it all runs the theme that it is so necessary for all of us to take to heart. We are in good part responsible for magnifying the objective in our examinations and of cultivating ineptitude in understanding the human consciousness. It is this potential abuse of the privilege of free or prepayment medical service that makes such plans financially hazardous and professionally unattractive.

#### **State Versus National Prepayment Deviselements**

The success of the Blue Cross in providing prepayment hospital service has greatly increased the demand for similar methods covering medical costs of sickness. We were shown in Detroit how well the Michigan State Medical Society has co-ordinated a limited surgical and obstetrical service in hospitals with the Blue Cross in that state. The two acting agencies are separate and distinct but occupy the same office building.

Your president is indebted to the Michigan State Medical Society and its president, Dr. A. S. Brunk, for the opportunity to observe the well-co-ordinated functioning of the administrative staff handling this work. You will hear more and more about Michigan's plans; and those of other states are outlined and come in the mails each week. The A.M.A. is keeping in close touch with all of these and is building up a press and radio appeal to present the individual state's reactions to the new Wagner-Murray-Dingell bill. This voluminous document is very challenging.

*The Journal of the American Medical Association* urges all doctors to read it; a few will do so.

The Council on Medical Service and public Relations of the A.M.A. sends out an excellent "News letter." Dr. John H. Fitzgibbon, chairman of this committee, circularizes the various state offices with a leaflet with illustrated and animated cartoons bearing the title "Do not socialize your medical care."

Michigan is extremely anxious to expand a radio program, which it sponsors, in which the entire setup of the public presentation and broadcast is left to those skilled in that field. There is much to be said in favor of this approach. (At this writing, Dr. A. S. Brunk, in line with this objective, is repeating the Detroit program as it was given to the state presidents, to the Denver public relations conference, at the invitation of certain western states.)

We should keep in touch with these various state movements, because it is evident that, as Dr. Joseph S. Lawrence intimates, the national legislation contemplated is on such an extremely broad scale and implemented so closely with social uplift in general, that it is not likely that any of it will be rushed through on any war emergency basis. Dr. Lawrence has repeatedly averred, however, that it is essential, above all else, for the various states to keep in close touch with their congressmen and senators in Washington.

#### **The Hospitals and Medical Practice**

We face the following issues and developments in terms of hospitals:

1. More and more doctors' activities have come to center about hospitals, and the trend is rapidly increasing.

2. Most of the prepayment service plans are contingent upon registration in a hospital by the patient. Just before the war, the groups serviced by the Blue Cross found a hospital bed very acceptable under conditions that frequently were neither emergency nor "catastrophic" in the surgical sense in which that limited service is now planned. As coverage for medical fees is provided, the trek to available hospitals will be decidedly augmented. Inevitable abuse will be encountered and only the attending doctors are in a position to check it.

3. It follows that medical staff hospital organizations must be tighter and enter into what is

rapidly becoming an integral part of our medical education program. But under this heading, I stress the problem of holding the staff member to a judicious use of hospital space and beds because "long stay" and unnecessary hospitalization will break down any prepayment plan. It remains to be seen whether "closed hospital staffs" as seen in our eastern states, or "wide open staffs" as obtains in our midwest may survive when the right of choice of physician is our first demand and where this same doctor is not provided a hospital staff appointment. This poses a difficult dilemma and points up the need of some farsighted adjustments. Where licensure to practice medicine is insufficient to entitle men to engage every privilege in a modern, highly-powered hospital, a degree of *intramural control and molding* is necessary for public safety.

4. At this juncture the United States Public Health enters the field with many plausible but injudicious plans for hospital space extension based all too much on wartime dislocations caused by the trekking of our population to war emergency plant concentrations, and by the subconscious undercurrent of military motion that builds roads where no one will ever use them and creates harbor facilities on the banks of dried up creeks.

There is a place for some of the hospital extensions as outlined in the Hill-Burton Bill, but as Dr. Haven Emerson has pointed out, all such ventures on the national level invite a surfeit in large population centers in order to build up to normalcy in sparsely settled and economically backward states.

This hospital bill is one of the many national drives at centralization and security that call for vigilant legislative molding and adaptation to give aid where it is actually needed.

A statewide survey is under way in Minnesota, undertaken by a Committee, appointed by Governor Thye, representative of the medical, hospital, nursing, dental and public health authorities the purpose of which will be to give a careful appraisal of existing hospital facilities and recommend such future expansion of facilities within the state as a careful review of circumstances would indicate.

So far our private hospitals seem able to plan their future on their own power.

5. A very great increase in Veterans Bureau

facilities is made necessary by the overwhelming number of sick and wounded destined to retain much morbidity and calling for complicated methods of rehabilitation. With nearly one-third of our population to be involved with the military personnel plans calling for extension of service to the families, certainly the veterans facilities should be brought closer and closer to home. It may be possible to handle a considerable portion of the veteran problem in our civilian hospitals.

6. Integrating our hospitals into the general medical educational problem: This development stems from the foregoing and may be analyzed under the following headings:

(a) Dr. Albert C. Furstenburg, Dean of the University of Michigan Medical School, has recently written that some 24,000 doctors now in military service will not return to civil practice. He estimates that 8,000 will be needed overseas; a like number, to service a much enlarged standing Army and active Navy; and 8,000 more for the expanding veterans facilities. To say that these figures are depressing in the extreme for those now in civilian practice and carrying the increased load of a public temporarily burdened with a fat purse, is to illustrate unusual understatement.

(b) This by-product of war is the ideal vehicle with which to impose upon our people and our profession a permanent bureaucratized panel system of medical practice such as came to England in the aftermath of the first world war. Our greatest current objective is to mobilize public support for our own far better state plans and the maintenance of a patient and physician relationship that has given our people the best service in the world. Our military forces in training and combat have had the same aggressive life-saving care, and let no one tell you that those brave men and women providing it came by their teaching and techniques in military camps and hospitals.

(c) Therefore, unless we are to become a fully and permanently militarized nation, we should preserve the system that has yielded so worthily up to date. This item concerns three conspicuous fields: (1) The men accepted for our medical schools: Just as soon as possible, more recruits for ultimate civil practice should be withheld from the selective draft and automatic training under the Army and Navy allotments. (2)

Medical specialism has come to be as necessary as basic medical intramural study itself. The class A medical schools are capable in normal times of graduating all the recruits to medicine needed. They are able to provide but a small part of the facilities and faculties for the residencies and fellowships we now need. Our private hospitals, adequately equipped, and having a sufficient number of Special Board Diplomates on their staffs are able to augment the training schedules offered long and short term applicants for graduate training. These affiliations are already under way. A department of the A.M.A. is now carrying on official investigation through inspection of satisfactory hospitals; and the returning medical veterans will have financial aid in taking advantage of their opportunities. (3) Increasing numbers of the specially fitted new recruits under age 30 should be released from the military forces in order to staff these private hospital residencies and fellowships. Many veterans with family responsibilities and nearing 40 years of age are already too old to begin the toilsome apprenticeships leading up to the basic training now demanded of diplomate men. This must not be taken by the older men as a limiting affront. The great field of general practice is perhaps the most essential and worthy of all the specialties; and it is obvious that many veterans now indicating in their answers to questionnaires their desire to enter limited specialties must be drafted for general service as soon as possible. The geriatric cohorts are dying off.

#### **The "Long Stay" Versus the "Short Stay" Patient**

(d) One half of the total bed space in the United States and Canada caters to "long stay" patients; but the other half takes care of 93 per cent of the yearly registration. The "long stay" hospitals (insane, tuberculosis, epileptic and aged seniles) includes the veterans bureau facilities. Recall that they suggest the need of 8,000 more doctors to serve them.

A new General in command may make some difference in the veterans bureau medical setup, but fundamental factors are likely to suppress that medical initiative that induces the private physi-

cian to justify his selection by the patient. The veteran is not a charity patient. He has earned all and more than he will ever get in terms of his life dislocation. Many will go to the veterans hospitals daring the staff to cure them or trifle with their prerogatives.

Nothing has ever safeguarded the ward patients in our large general hospitals as much as their utilization for teaching purposes. No follower of Aesculapius is as zealous for the sick man's rights and needs as the qualified resident, properly apprenticed to a teacher endowed with a real human touch as well as a scientific mind. Yes, these bureau hospitals must be drawn into the medical teaching group.

The "short stay" patient will continue to yield the maximum inspiration; but the "long stay" provides many acute episodes and a leveling inhibition upon the recruits to the guild who have to learn that "doctors become more and more umpires and guides and less and less healers." Our brethren in all the "long stay" hospitals must be rescued from the blight of segregation and isolation.

#### **The Mayo Memorial at the University**

No movement in the last forty years has meant more for Minnesota medicine than the proposal to integrate and unify the facilities of our University hospital. We are well on the way to securing the needed appropriation. Your help in securing the legislative support and furthering the raising of the respective quota in your counties has yielded fine results. From now on we need to extend the pioneer work of graduate instruction as it has developed under the University and Dr. William A. O'Brien at the Coffman Continuation Center.

More funds for research and auditorium space for receiving larger study groups give the greatest promise for the future. It will become harder for competing institutions to draw our good teachers and research men away from us.

I hope you will carry back to your respective county committees raising the Memorial funds, the thanks of the Founders Committee; and that you will expedite the closing of the campaign.

## MATERNAL DEATHS DUE TO INFECTION

### Minnesota Maternal Mortality Committee

THE study of all maternal deaths in Minnesota from July 1, 1941, to and including June 30, 1942, showed that twenty-six deaths were due to infection. The patients ranged in age from twenty to forty-six years, with the largest number being in the late thirties. The ratio of primigravidae to multigravidae was 8:18. Ten of these deaths occurred in the metropolitan centers of Minneapolis, Saint Paul and Duluth; the remaining sixteen were scattered through the rest of the state.

Your committee felt that eighteen of the twenty-six deaths were preventable and seven nonpreventable, while in one it was impossible to determine the preventability. The committee concluded that practically all of the preventable deaths were the responsibility of the attending physician.

#### Cause of Death

The cause of death was difficult to determine in many cases because of the paucity and unreliability of either hospital and/or physicians' records and infrequent or inadequate postmortem examinations. The latter is especially true in the rural communities. The causes of death are grouped as follows:

*Abortion*—11 deaths.

Peritonitis (5).

Septicemia (3).

Tetanus.

Pyemia.

Septicemia (extra-genital infection).

*Full or Near Full Term*—15 deaths.

Pulmonary embolism (7).

Peritonitis (3).

Puerperal sepsis (2).

Mesenteric thrombosis.

Septicemia with pneumonia.

Septicemia (extragenital infection).

#### Abortions

Of the twenty-six deaths, eleven occurred in either the first or second trimester. These were due to a variety of causes which included pyemia following pelvic surgery during a puerperal infection associated with a spontaneous abortion at three months' gestation, septicemia and pulmonary

abscess following a uterine curettage in an infected abortion, and peritonitis due to an accidental perforation of the small bowel incident to pelvic surgery too soon after a spontaneous abortion followed by puerperal infection. One of the deaths was due to septicemia from extra-genital infection. A cellulitis of the chin was the primary site of infection. The chemotherapeutic attack was grossly inadequate and no sulfonamide blood levels were determined. The death was classed as probably preventable. Four of these abortions were self-induced and four spontaneous.

Of those self-induced, tetanus was the cause of death in one, peritonitis in two and probably peritonitis in the fourth.

In the spontaneous abortion group, peritonitis was the cause of death in two cases, pyemia and septicemia in one each. One of the deaths from peritonitis occurred in a sixteen-week pregnancy with a probable acute appendicitis. Laparotomy without drainage was done in spite of a frank peritonitis. In another, extensive pelvic surgery was done in the presence of puerperal infection. Errors in diagnosis and judgment were followed by a spread of what potential pelvic infection was present and death followed. In another, a uterine tampon was left *in situ* for a period of seventy-two hours followed by a subtotal hysterectomy, septicemia and death. The fourth death, previously mentioned, was one in which a uterine curettage was performed in the presence of an infected abortion.

There were two tubal pregnancies in both of which peritonitis was the cause of death. The operator did an incidental appendectomy in conjunction with the tubal surgery in both.

#### Full or Near-Full-Term Deaths

Fifteen deaths were included in this group.

One was due to septicemia of undetermined origin. This was probably an extragenital infection and hypodermic injection was probably the portal of entry. It was impossible to determine either preventability or responsibility of death.

Of the remaining fourteen, pulmonary embolism was the cause of death in seven, peritonitis

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in four and septicemia or puerperal sepsis in the remaining three. Factors involved in the fourteen deaths are detailed as follows:

*Cephalo-pelvic Disproportion.*—Cephalo-pelvic disproportion was a factor in three of the fourteen deaths. The final picture varied but all three showed somewhat similar initial problems which included postmaturity, excessively large fetus (more than 10.5 pounds), long labor (60-120 hours), and/or difficult delivery with either completion of dilatation manually or desperate cesarean section. Death was due to peritonitis in one, to mesenteric thrombosis in one, and to thrombophlebitis and pulmonary embolism in the other.

The first patient, a primipara, who had had no pelvic mensuration, went into labor spontaneously after the forty-first week of pregnancy. After spontaneous rupture of the membranes and seven hours of hard labor the child was found to be presenting by the face. The consultant made a diagnosis of "questionable pelvis." A low cervical cesarean section was performed. On the second postoperative day the patient's temperature rose to 102° F. and pulse rate to 140. A diagnosis of peritonitis was made. In spite of adequate chemotherapy and blood transfusions the patient died the eighth postpartum day. One must assume that adequate pelvic mensuration and proper recognition of the disproportion before the onset of labor would have averted the necessity of the desperate operative delivery which led to the death of this patient.

Death in the second patient was due to a mesenteric thrombosis with gangrenous ileum and peritonitis. There was added shock due to manual dilatation of the cervix and podalic version on an excessive sized macerated fetus (10.5 lbs.). This followed medical induction of labor and a prolonged labor with premature rupture of membranes at 42.5 weeks' gestation. It is probable that early recognition of the cephalo-pelvic disproportion *before* the onset of labor, and delivery by elective cesarean section would have averted this catastrophe.

Death in the third patient of this group was due to pulmonary emboli due to thrombophlebitis following cesarean section with hysterectomy. This was done after 120 hours of labor which was complicated by intrapartum infection and cephalo-pelvic disproportion. Early recognition

of the disproportion and induction of labor at or even before term would probably have prevented this death.

*Cesarean Section.*—This procedure was done in five of the fourteen patients. Two were elective classical, one nonselective low cervical, and two were classical cesarean sections followed by hysterectomy.

In the elective classical group, one death was due to peritonitis eight days after the operative procedure. This patient had an acute upper respiratory infection prior to the operation which was done under general anesthesia. The post-operative course was complicated by peritonitis which became apparent on the third postoperative day. No chemotherapy was given until the day of death. Local anesthesia instead of general anesthesia undoubtedly would have been safer.

In the second case death was due to pulmonary embolism due to thrombophlebitis following elective cesarean section with multiple myomectomy for pre-eclampsia with possible superadded pyelonephritis at thirty-four weeks' gestation. The postoperative course was febrile with temperature rising to 105.6° on the third day. It gradually returned to normal and remained so on the eighth to tenth day. It then rose again from 99.2° to 100°. On the fourteenth day, while still febrile, she was allowed out of bed. This was followed by a fainting spell with a pulse rate of 156 and a temperature of 101° F. The blood pressure was 72/60. The patient had severe chest pain and cyanosis. Death followed on the fifteenth postoperative day. Autopsy revealed a pulmonary embolus and thrombosis of the left femoral vein. Criticism in this case is directed to the failure on the part of the attendants to recognize a continuing infectious process as evidenced by a return of fever. There is no justification for allowing the patient out of bed while still febrile.

The non-elective low cervical section was previously reviewed in the disproportion group.

Of the two classical sections followed by hysterectomy, one has been discussed under disproportion. The remaining death was due to pulmonary embolism fifteen days after operative delivery at term and twenty weeks after exploratory laparotomy complicated by postoperative thrombophlebitis. The patient was a forty-six-

year-old primigravida whose menstrual periods have been normal but ceased about six months before her present illness. She consulted her physician because of an abdominal enlargement. An Aschheim-Zondek test is said to have been normal. On the twenty-second week of gestation she was subjected to a laparotomy and this revealed a normally pregnant uterus. On the twelfth postoperative day she experienced marked dyspnea on getting out of bed. A diagnosis of venous thrombosis in the right leg was made. She was discharged on the forty-fifth postoperative day. She progressed normally until term, at which time an elective classical section was done. Due to difficulty in closing the uterine wound because of the presence of myomata, a subtotal hysterectomy was performed. The postoperative course was normal until the sixteenth postoperative day when she collapsed after getting out of bed and expired about one hour later. No autopsy was obtained. The cause of death was believed to be pulmonary embolism due to sub-clinical thrombophlebitis. This death was classed as probably nonpreventable. In retrospect one can state that clinical or x-ray examination would have revealed the presence of a pregnancy at twenty-two weeks. Laparotomy would not have been done and perhaps the subsequent tragic events might not have occurred.

*Exogenous Infection Deaths.*—In this group were six cases in which the technique at delivery was probably the primary factor concerned in the cause of deaths. It would seem unnecessary to mention the need for sterile precautions at delivery, the recognition of the presentation of the fetus and the usual conservative management of the infected postpartum patient. However, the need for re-emphasis of sound obstetrical procedures is evident in the review of the following deaths.

*1. Breech delivery in the home.*—This patient was a para 10. Without sterile precautions, a difficult delivery of a large fetus presenting by the breech was carried out. This was followed by an excessive loss of blood. This patient was unco-operative and got out of bed on the third postpartum day. Death from puerperal sepsis occurred on the twenty-ninth day. The physician and the patient must each assume a share of the responsibility.

*2. Pulmonary embolism and thrombophlebitis.*—This patient was a para 1 and at term. She was delivered by an apparently easy outlet forceps after six hours of labor. Because of profuse bleeding in the third stage and also because the placenta could not be delivered, a manual removal of the placenta was done an hour and a half later. From the first to ninth postpartum days her temperature fluctuated from 99.4° to 101° and her pulse ranged from 80 to 120 with a hemoglobin reading of 35 per cent. Because of continued and increased bleeding a dilatation and curettage was done on the ninth postpartum day. She developed a thrombophlebitis in her left leg and although still febrile with a temperature of 100.4°, she was discharged from the hospital on the sixteenth postpartum day. Death was due to pulmonary embolism due to thrombophlebitis.

*3. Septicemia with pneumonia and uremia.*—This patient was a forty-one-year-old primipara who received practically no prenatal care in spite of monthly routine visits to her physician. No pelvic measurements were made. No blood Wassermann was taken. No determination of her hemoglobin was done. There were no routine urinalyses, blood pressure determinations, abdominal palpations, or even weight measurements. She fell into labor spontaneously in her thirty-ninth week of pregnancy. After about eight hours of labor her blood pressure ranged from 170/90 to 190/100, and albuminuria was present. The first stage lasted for more than seventeen hours and because of no progress in the second stage, a total of 9 minims of pituitrin was given intramuscularly within one hour and forty-five minutes. Delivery was finally accomplished after twenty-one hours of labor by outlet forceps extraction. On her second postpartum day her temperature rose to more than 102° F. and continued at about that level. She had abdominal tenderness and distention which persisted. On the sixth postpartum day the first laboratory studies showed a hemoglobin of 80 per cent, white blood cells, 54,000, blood urea nitrogen, 220 mgm. per cent. She became restless, irrational, and died on the seventh postpartum day. Death was due to septicemia with pneumonia and uremia.

*4. Pulmonary embolism due to puerperal sepsis.*—This patient was a para 2 who went into

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labor at the thirty-ninth week of pregnancy. Uterine contractions ceased and membranes ruptured after six and one-half hours of labor. Without any determination of either fetal position or presentation and without any knowledge of the condition of the cervix, a total of 9 minims of pituitrin was given during a period of twenty-eight minutes. Strong pains resulted and a sterile vaginal examination revealed a transverse presentation with prolapse of an arm. With difficulty, the prolapsed arm was replaced and a podalic version was done. Sulfathiazole in 1 gm. doses was given every four hours for the next six days. The pulse rate remained below 100 and the temperature at about 99°F., until the ninth postpartum day when the pulse rate increased to 110 and the temperature rose to 99.6°. On this day she was allowed out of bed. On the following day, as she got out of bed to go home, she suddenly complained of faintness, dizziness, and substernal pain. She became cyanotic and died within a few minutes. Autopsy revealed a large embolus involving both branches of the pulmonary artery. This death was classed as non-preventable.

5. *Pulmonary embolism following puerperal sepsis.*—This patient, a para 1 at term, was delivered spontaneously without sterile precautions at home after a two-hour labor. All information was obtained from the physician's memory and the full story of her postpartum history was not complete. However, it was stated that she was well until the tenth postpartum day when she complained of a severe chest pain. The temperature rose to 102° and she expectorated bloody sputum. She received apparently adequate sulfonamide therapy and the temperature returned to normal. Apparently she remained in bed and on the twenty-seventh day, while receiving her morning bath, she expired suddenly. Autopsy was not obtained. The cause of death was believed to be pulmonary embolism due to puerperal infection. This death was classified as probably non-preventable.

6. *Questionable pulmonary embolism due to thrombophlebitis.*—Both hospital and office records were incomplete and most of the information was obtained from the physician's memory. This patient was a para 7, apparently at term. A questionably sterile vaginal examination in bed was

done to determine the course of labor. After approximately fifteen hours of labor, delivery was effected by low forceps. Except for a temperature rise to 100.4° eight hours after delivery she was afebrile and had no complaints until the seventh postpartum day at which time she experienced very sudden pain in her right thorax. Her temperature rose to 99.2° and pulse to 92. She was given 135 gr. sulfanilamide in the next five days. She is said to have been in good condition and to have felt well until the morning of the fourteenth postpartum day when she suddenly became dyspneic, cyanotic and died within ten minutes. Autopsy was not done. The cause of death was probably pulmonary embolism due to puerperal thrombophlebitis. This death was classified as probably nonpreventable.

### *Remaining Deaths.—*

1. *Probably puerperal sepsis* possibly with myocarditis and/or toxic hepatitis from sulfanilamide. Both office and hospital records were so incomplete that no definite statements regarding preventability or cause of death could be made with any degree of certainty.
2. *Peritonitis* with terminal pneumonia due to small bowel obstruction from postoperative adhesions. Conservative therapy was carried out for nine days, followed by surgical release of adhesions and spontaneous labor at twenty-eight weeks' gestation. This was really a nonobstetrical death.

### **Lessons Which May Be Learned From a Study of the Maternal Deaths Due to Infection**

For purposes of study, deaths due to infections can be divided into three periods, prenatal, labor and delivery, and the postpartum period.

*Prenatal Care.*—The need for continued emphasis on adequate prenatal care is seen by the study of these deaths. Only 1.8 per cent of all patients who died in Minnesota during the year received even minimum adequate prenatal care.

The minimum requirements of adequate prenatal care as set up by this committee were as follows:

1. Adequate history and general physical examination.
2. Pelvimetry to include measurement of the antero-posterior diameter of the pelvic inlet, palpation of the sacrum, and intertuberous diameter of the outlet.

3. Blood Wassermann.
4. Blood pressure determination.
5. Urinalysis.
6. Weight determination.
7. Abdominal palpation in the last two months of pregnancy.
8. Reasonably adequate study of abnormalities presenting themselves during these visits.

The detailed study reveals a definite lack of proper prenatal care in many instances. No pelvic mensuration, blood Wassermann, abdominal palpation, hemoglobin, weight determination or routine urinalysis was done in one patient. It is easy to demonstrate that such crude medical care is the cause of a large proportion of maternal deaths.

Another factor was the improper evaluation of the status of the fetus in relation to the size of the mother's pelvis. An attempt should be made to individualize each patient in an estimation of the weight and size of the fetus and the probability of this particular fetus to engage and pass through this particular pelvis. In cephalo-pelvis disproportion this is particularly true. In questionable pelvis, and particularly in these with mid-pelvic contractions, x-ray pelvimetry should be done before the onset of labor.

Previous obstetrical history is another factor which merits mention. In two instances death might have been prevented by elective cesarean section. There was a history in one of two long labors resulting in the delivery of stillborn infants and yet this patient was allowed to go into labor again. Dystocia again was encountered, leading to manual cervical dilation, operative delivery, followed by thrombophlebitis and death due to pulmonary embolism.

The role of the patient in regard to prenatal care is an important one, yet in three of the patients who died, the patient did not visit a physician at any time for such care. In two instances, sexual relations in the last week of pregnancy were possibly factors in causing the infectious episodes that followed delivery.

*Labor and Delivery.*—In the general summary it was shown that patients who died too often received inadequate care during labor and delivery. Study of the conduct of labor revealed the fact that many vaginal examinations were done under questionably sterile precautions. Vaginal

examination of the patient in bed was done in five instances. In two operative deliveries there was a decided lack of preparation of the patient for the surgical procedure. In one no blood examination was done before operation. In another a cesarean section was done in spite of a hemoglobin of 49 per cent and the patient did not receive additional supportive measures in the forms of blood transfusions.

Another factor in delivery was the choice of anesthetic. General anesthesia was employed in the great majority. Its use in two patients with pulmonary disease was undoubtedly a causative factor in their deaths. In the five cesarean section deaths, ethylene, ethylene and ether (two), spinal and ethylene, and spinal anesthesia were used. The infrequent use of the safer local anesthesia is to be deplored.

*Postpartum Care.*—In the general summary it is shown that adequate postpartum care was given to only 3.5 per cent of the patients who died.

The chemotherapeutic attack in most of the patients was not fully utilized. Either an underdose of sulfonamides was given, or the choice of the particular sulfa compound was not the wisest. Sulfanilamide was given in many instances where either sulfathiazole or sulfadiazine would have been more effective. There were very few estimations of the blood levels of the sulfonamides. As a result the full and safe therapeutic attack could not be assured.

Although bacteriological studies should always be done in puerperal sepsis, the drug should be administered early without waiting for culture reports. Most severe puerperal sepsis is due to the hemolytic streptococcus, and early and effective chemotherapy should be instituted.

According to Sinykin at the University of Minnesota Hospitals, sulfadiazine has become the drug of choice for almost all obstetric infections. It is rapidly absorbed and slowly excreted and shows very little evidence of toxicity. This allows a rapid rise in blood concentration of the drug and maintenance of the desired blood level with less frequent dosage. For the ordinary adult patient 2 or 3 grams of sulfadiazine and 4 grams of sodium bicarbonate are given as an initial dose. Thereafter, 1 gram of sulfadiazine and 4 grams of sodium bicarbonate are given every six hours. This will usually produce blood levels of the

## MATERNAL DEATHS DUE TO INFECTION

drug of 6 to 8 milligrams per cent. Severe infections may on occasion justify pushing the blood concentration to higher levels. When the drug cannot be taken or retained by mouth, sodium sulfadiazine may be given intravenously or subcutaneously. For intravenous use, 3 grams of sodium sulfadiazine may be given as a 0.5 per cent solution in physiological saline. One gram should be given similarly every six to eight hours. Similar doses may be used subcutaneously in a 1 per cent to 2 per cent concentration.

Since sulfathiazole and sulfadiazine are poorly soluble in water, sufficient fluid must be administered to produce a measured urinary output of at least 1,000 c.c. in twenty-four hours.

At present there seems to be little justification for the use of the other sulfonamides in purely obstetric infections. Sulfathiazole is useful in some staphylococcus infections as puerperal mastitis and staphylococcal infections of the urinary tract.

Penicillin is now taking its place as even more effective than the sulfonamides. In severe puerperal infection, this may be given in dosages of 1,500 to 20,000 units every two to three hours for the first twenty-four hours and subsequently in dosages of 10,000 to 15,000 units every three hours. This therapy may be combined with sulfadiazine therapy as detailed above.

The general principle in the therapy of a severe puerperal sepsis involves the assumption that it is caused by the aerobic hemolytic streptococcus most often and the staphylococcus less often. Early and extremely active chemotherapy adequately controlled is essential. The anaerobic streptococcus of thrombophlebitis is unlikely to be affected.

The treatment of thrombophlebitis is primarily prophylactic. However, when thrombophlebitis does occur, extreme conservatism in treatment

should be employed. Rest and elevation of the affected part and preferably dry heat, should be used if the lower extremities are involved. Too much emphasis cannot be placed on conservative treatment. Elevation of temperature above the normal without other explanation should make one suspicious of hidden active thrombophlebitis. Continued rest in bed and elevation of the affected limbs should be used as long as slight temperature elevations are present.

Dicoumarin and heparin have given encouraging results in the prevention and treatment of thrombophlebitis and pulmonary embolism. This is particularly true in those patients who have previously had known thrombophlebitis and in whom prophylaxis is required.

Two deaths detailed in this study might well have been prevented if more conservative measures had been employed. These patients were allowed out of bed with elevated temperatures of 99.6° to 100° and increase in pulse rates to 96 and 110. The tragic sequel was pulmonary embolism.

### Comments

Maternal mortality throughout the United States has been definitely decreased in the past five years. Maternal mortality in Minnesota has followed this trend. Hemorrhage and infection are still the most important causes of maternal deaths. Such factors as increase in hospitalization of the patient, the wider use of chemotherapeutic drugs and the increase in prenatal care have played a large part in this reduction of maternal deaths. Sound obstetric practice, however, is of paramount importance. Proper obstetric procedure and the adequate employment of the newer chemotherapeutic drugs will reduce the maternal deaths due to infection and aid the medical profession of Minnesota to reach their goal of less than one maternal death for every thousand live births.

### FREE DRESSINGS

The Minnesota Cancer Society has a supply of surgical dressings which they would like to give to patients needing such dressings. Cancer patients, as well as any other patients needing such dressings, may have them.

The dressings, which are unsterile, are made of soft white material with a cellulose filling in sizes 8 by 8 inches and 8 by 12 inches. Bandages in widths from 1

to 4 inches are also available. The dressings are made by various groups and organizations throughout the State so there will be a continuous supply.

Physicians may obtain them for their patients by writing, or having their patients write, to the Minnesota Cancer Society, 362 Lowry Medical Arts Building, St. Paul, Minnesota. In some counties, the County Nurse keeps a supply of these dressings. There is no charge for the dressings or for postage.

# THE COLONNA RECONSTRUCTION OPERATION FOR UNUNITED FRACTURES OF THE NECK OF THE FEMUR

MELVIN S. HENDERSON, M.D.

and

JOHN J. HINCHEY, M.D.

Rochester, Minnesota

THE large majority of patients with ununited fractures of the neck of the femur are elderly. Consequently, operation should be undertaken only after careful examination and consideration of their fitness. Age in itself is no contraindication.

The fundamental lack in these patients is skeletal support and a number of operations have been devised to provide such support. The neck of the femur normally is at an angle of 127 degrees with the shaft and when an ununited fracture exists and weight-bearing is attempted, the lower fragment tends to slip upward and the body weight is carried only by the capsule and such fibrous union as may have formed. Very seldom is the fibrous union of sufficient strength to enable the patient to get about without support.

Conditions at the site of fracture pretty well determine the type of surgical procedure to be performed. If the head of the femur is viable and a fair amount of the neck of the femur remains, some form of bone grafting should be considered.<sup>5-7</sup> If the head is viable but the neck has been absorbed the Brackett operation<sup>8</sup> or some modification of it should be used. These operations, which re-establish bony continuity of the head and the shaft of the femur, in many instances have been followed by full restoration of function.

Even if union is secured in a case in which the head of the femur is dead, it will atrophy and wear away under use, resulting in a painful and stiff joint. With such an atrophic head present, one of the so-called reconstructive operations is indicated. Two operations of this type with the common basic feature of removal of the head of the femur are the Whitman<sup>9</sup> and the Colonna.<sup>1-4</sup> In this paper we propose to call attention to the

Colonna procedure (Fig. 1), emphasizing (1) the type of case best suited for it, (2) technique, (3) postoperative care and (4) results.

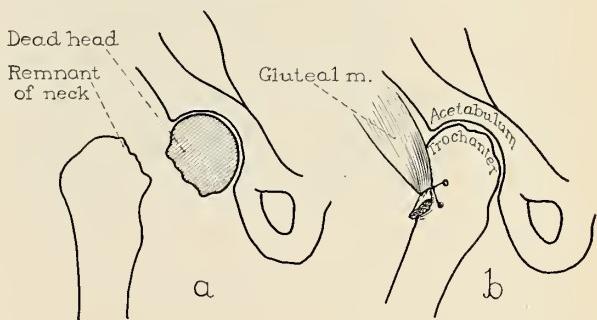


Fig. 1. *a*, Diagrammatic representation of conditions; *b*, dead head excised and trochanter put in acetabulum to re-establish skeletal support. Gluteal muscles fastened at lower level.

## Type of Case

It is not always possible to tell definitely from roentgenograms whether the head of a femur is viable or dead. If it is dead, the blood supply is lacking and the head in the roentgenogram casts a denser shadow than does the normal head and the contour is likely to be irregular. It is in the cases in which the blood supply is fair that difficulty arises in determining just how good the head is. Only by actual inspection of the head at the time of operation can a definite decision be made. If the head is yellowish and the cartilage is thin and if bleeding from the bone is absent or is slight and patchy when the fractured surface is exposed and freshened, it can be assumed to be dead. In this type of case the Colonna operation is useful.

## Operative Technique

In 1935, Colonna<sup>1</sup> published a paper entitled "A new type of reconstruction operation for old ununited fracture of the neck of the femur." He reported six cases, the youngest patient being forty-eight years of age and the oldest, seventy. Four were females and two were males. He

Since this paper was written, Dr. Hinckley, formerly a Fellow in Orthopedic Surgery, Mayo Foundation, has joined the armed services and is now Lieutenant (jg), Medical Corps, United States Naval Reserve.

From the Section on Orthopedic Surgery, Mayo Clinic, Rochester, Minnesota (Henderson).

stated that this type of reconstruction operation was designed primarily for those cases in which nonunion was accompanied by complete absorption of the femoral neck. His operation was designed not only to secure stability in an advanced type of ununited fracture but also to produce a satisfactory range of movement in all directions and to lengthen the shortened extremity.

Colonna used an anterior straight incision, exposed the greater trochanter and carefully cut away the muscles close to their insertion into the trochanter. He then opened the capsule and removed the head of the femur and also inspected the surface of the femur to see if any remnant or spicules of the neck of the femur remained. If so, they were chiseled off flush with the inner surface of the shaft. After the greater trochanter was completely freed of all its muscle attachments, the leg could easily be pulled down and the trochanter placed deeply within the acetabulum, holding the hip in 20 degrees of abduction and fully extended. The capsule and abductor muscle then were pulled down together and fastened down over the trochanter into a bony trough which had been made in the lateral aspect of the shaft of the femur at about the junction of the base of the trochanter with the shaft. He cautioned that the leg should be held in such a position that the patella looked directly forward. The fibers of the vastus lateralis were sewed back over the area where the abductor muscles were fastened to the shaft. He then placed the patient in a long plaster spica cast applied from the toes to the axilla with the limb in about 20 degrees of abduction and complete extension. In four weeks the plaster was bivalved and active and passive movements were begun.

The rules laid down by Colonna should be followed closely, particular care being taken to fasten the abductor muscles low enough to insure proper tension and to see that at least 20 degrees of abduction of the hip is maintained and that the patella looks directly forward and the foot is not inverted. If the leg and foot are allowed to rotate inward a troublesome toeing-in ensues.

#### **Postoperative Care**

For fixation we prefer to use a double plaster-of-Paris cast extending from the thoracic mar-

gin to the knee on the sound side and to the toes on the affected side rather than the single spica as advised by Colonna. We bivalve the cast two or three weeks after the operation and by aid of a sling beneath the knee attached to an overhead rod and pulleys, have the patient flex the knee and so the hip. Abduction, however, must be maintained for about six weeks. This is accomplished by keeping the patient in the posterior half of the spica cast. Then the patient is allowed up on crutches and moderate weight bearing is permitted as soon as he feels so inclined.

#### **Results**

Between 1935 and 1944, inclusive, twenty-five patients who had ununited fractures of the neck of the femur were operated on by the Colonna method. Twenty-three were females and two were males. Their ages ranged from sixteen to seventy-three years. Classified according to decades they were divided as follows: There was one patient in the second decade, two patients in the fifth decade, four in the sixth, fifteen in the seventh and three in the eighth.

It is difficult to evaluate end results in operations of this kind on elderly patients. Age slows up many people. Some maintain their alertness and muscular co-ordination much better than others. Some loss of motion of the hip always results. One cannot expect a normal hip joint when the head of the femur is removed. For classification of our results we establish four divisions: excellent, good, fair and poor.

When the patient could walk with no support, was able to put on his shoe and stocking unaided and had no pain, the result was classified as excellent. The result was considered good if the patient walked with the aid of a cane but could get about the house without the cane in reasonable comfort, was able to put on his shoe and stocking without assistance and had no pain. The result was classified as fair if the patient always walked with some support, cane or crutch, was unable to put on his shoe and stocking without assistance, had a moderate amount of pain but was really improved over the condition prior to operation. The result was regarded as poor when the patient walked with support, was unable to put on his shoe and stocking unaided, was hav-

ing pain and seemed no better than he had been before the surgical procedure.

At the time of preparation of this report, sufficient time (at least eighteen months) had elapsed

poor results varied from sixty-four to seventy-three, with an average of sixty-eight.

The length of time that the nonunion had existed prior to operation varied in the different



Fig. 2. Roentgenograms in case of a forty-one-year-old teacher; *a*, July 25, 1945, nonunion of twenty months' duration, with atrophic dead head and absorption of most of neck; *b*, September 5, 1935, after operation; trochanter in acetabulum. Ten years after operation patient is able to walk without the aid of crutch or cane and to put on shoe and stocking without difficulty. She is able to carry on with her teaching activities.

in twenty-two cases to determine with reasonable accuracy the end result. In seven cases the result could be classified as excellent, in five cases as good, in five as fair and in five as poor.

As might be expected, on the whole the younger patients obtained better results than the older ones. The ages of the patients classed as having excellent results ranged from forty-one to sixty-two, with an average of fifty-five.

The ages of those having good results varied from sixteen to sixty-nine, with an average age of fifty-five. The sixteen-year-old patient was a boy who had sustained a fracture of the neck of the femur while skiing. He was operated on at his home and a Smith-Petersen nail inserted. Sepsis followed with breakdown of the fracture with necrosis and loss of the head of the femur. We saw him twenty-seven months after the accident and performed a Colonna operation to give skeletal support. In so far as skeletal support is concerned the result is excellent but motion is sufficiently limited so that the result was classified only as good.

The ages of those who obtained fair results ranged from fifty-nine to sixty-eight, with an average of sixty-six. The ages of those who had

groups. In the group in which the result was considered excellent, the time varied from nine to thirty months, with an average of seventeen months. In the group of patients who had a good result, it varied from eleven to forty-four months, with an average of twenty-eight months. In the group of patients with fair results it varied from four to sixty-five months, with an average of twenty-nine months. In the group of patients with poor results it varied from two months to thirty-five months, with an average of seventeen months. Strange to say, the sixty-five year old woman who had only a two months' history had most marked nonunion with practically complete absorption of the neck.

There were no deaths or serious complications of any sort in this series.

### Conclusions

1. The Colonna operation for ununited fracture of the neck of the femur should not be used in cases in which the patient has a live, movable head. With such conditions existing, our preference is for the bone graft (when sufficient neck of the femur remains) or the Brackett operation if the neck is largely absorbed.

## RETROPHARYNGEAL ABSCESS—HOCHFILZER

2. The Colonna operation is suited for those cases of ununited fracture of the neck of the femur complicated by a dead or partially dead atrophic head of the femur with marked absorption of the femoral neck.

3. In view of the serious disability that elderly patients have as a result of ununited fractures, the fact that of twenty-two cases, seven showed excellent results and five good results after a period of at least eighteen months after operation establishes the operation as a useful procedure.

4. In general, the younger the patient and the shorter the duration of the nonunion, the more favorable the result (Fig. 2a and b).

### References

- Colonna, P. C.: A new type of reconstruction operation for old ununited fracture of the neck of the femur. *J. Bone & Joint Surg.*, n.s., 17:110-122, (Jan.) 1935.
- Colonna, P. C.: A reconstruction operation for old ununited fracture of the femoral neck. *J. Bone & Joint Surg.*, n.s., 19:945-954, (Oct.) 1937.
- Colonna, P. C.: Reconstruction operation for old ununited fracture of the femoral neck. *J. Oklahoma M. A.*, 31:266-268, (Aug.) 1938.
- Colonna, P. C.: Colonna reconstruction operation for ununited fractures of neck of femur; analysis of 70 cases. *J. Bone & Joint Surg.*, n.s., 21:701-709, (July) 1939.
- Henderson, M. S.: Ununited fracture of the neck of the femur treated by the aid of the bone graft. *J. Bone & Joint Surg.*, n.s., 22:97-106, (Jan.) 1940.
- Henderson, M. S.: Extra-articular osteosynthesis; for non-union of fracture of the neck of the femur. *Arch. Surg.*, 42:557-565, (Mar.) 1941.
- Henderson, M. S.: Treatment of ununited fractures of the hip. *S. Clin. North American*, pp. 751-761, (Aug.) 1944.
- Rowe, M. L., and Ghormley, R. K.: Brackett operation for ununited fracture of the neck of the femur; a report of thirty-four cases. *J. Bone & Joint Surg.*, n.s., 26:249-256, (Apr.) 1944.
- Whitman, Royal: The reconstruction operation for ununited fracture of the neck of the femur. *Surg., Gynec. & Obst.*, 32:479-486, (June) 1921.

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## RETROPHARYNGEAL ABSCESS AND MASSIVE HEMORRHAGE

JOHN J. HOCHFILZER, M.D.

Saint Paul, Minnesota

THERE are few complications in the field of otolaryngology which are so perplexing and tragic as a massive hemorrhage from the throat. Such a hemorrhage is usually most unforeseen and unexpected by the attending physician and in most cases fatal to the patient. Textbooks in the main make very little reference to this grave complication, but from the literature and personal communications of colleagues one is surprised to discover a great many cases have never been reported. An analysis of all these cases would undoubtedly afford most valuable data for the future guidance. This consideration prompts me to present the following case.

A female child two years old was admitted to the University of Minnesota Hospital on April 17, 1944. The following history was obtained from the child's mother: nearly all the members of the family had flu and sore throats prior to the patient's admission; the patient herself became ill on April 5 with fever and anorexia; a few days later her neck became stiff and swollen on the left side. These symptoms lasted for one week with a temperature up to 104°. On April 13 the temperature became normal; she tried to eat, but her throat hurt her; the following days she played outside, was cheerful, but always complained of pains when she tried to eat. On April 15, ten days after the onset of her illness, she woke up vomiting about a half cupful of fresh blood. Half an hour later she vomited another half cup of blood. The local physician was called, but could not come; he ordered cold packs to the stomach and to withhold food. Two hours later she vomited again a small amount of brownish material. For the rest

of the day she felt well and wanted to eat; she slept well that night. The following day she was also cheerful, had no complaints until 6 p.m. when, after eating milk toast, she again vomited up a full cup of fresh blood. This happened intermittently all night. In the morning the child was very weak, listless and extremely pale.

On the advice of the local physician the parent brought the child that morning to the University of Minnesota Hospital, where she was admitted to the pediatric department. On arrival at the pediatric ward she again vomited a large amount of blood; immediately the department of otolaryngology was asked for consultation. When we saw the child, which was very soon after her admittance, she was in extreme shock, very pale, listless, the pulse rate 150, thready; the hemoglobin was 22 per cent. On examination of the throat a mass the size of a small egg was seen at the left lateral pharyngeal wall; its surface was smooth, its color bluish. In the center of this mass a small opening could be noticed from which a blood clot was protruding. The lymph nodes on the left side of the neck were markedly swollen. The history and clinical findings left no doubt that we were dealing with a retropharyngeal (parapharyngeal) abscess which had eroded one of the big blood vessels, in all probability the left internal carotid artery. The patient was immediately brought to the operating room. Under ether anesthesia the left common carotid artery was exposed and ligated. Inflamed enlarged lymph nodes surrounded the sheath of the large blood vessels but no hematoma or free pus was encountered.

No further bleeding occurred. The child received several blood transfusions. There was no cerebral complication whatever. She made an uneventful recovery and left the hospital ten days after the operation. She has been seen several times since and appeared normal and healthy in every respect.

Pharyngitis or tonsillitis, whether occurring as a part of a nonspecific infection of the upper respiratory tract or as one of the contagious diseases, may lead to suppuration in the adjacent tissues; as a result, the familiar retropharyngeal or peritonsillar abscess occurs. In retropharyngeal abscess the infection is carried by lymphatics to the small lymph glands lying anterolateral to the upper cervical vertebra, which break down, causing an accumulation of pus, which as a rule, is circumscribed within the pharyngeal limits, but which in some instances may follow the deep fascial planes up to the base of the skull or down to the mediastinum.

A drawing reproduced from Corning (Fig. 1) shows a cross section of the neck at the level of the tonsil. The picture shows how much closer to the pharyngeal wall the internal carotid artery lies than does the external carotid artery, which is partly shielded by the styloid process and the muscles descending from it. In cases where the inflammatory process penetrates through the protecting fascia, the large blood vessels themselves, especially the internal carotid artery may become involved. The infection damages the vessel wall, weakens its protective coat, which, slowly distending, forms a pseudo-aneurysm which may suddenly rupture with devastating hemorrhage.

As a rule aneurysm of the internal carotid artery presents in the lateral part of the pharynx behind the tonsil, whereas aneurysm of the external carotid artery is found in the neck. In the presence of infection one must always view with suspicion any soft, smooth, fluctuant swelling presenting in the lateral part of the pharynx or at an angle of the jaw where pulsation is present or where there is a difference in the pulse of the two sides. A preliminary needle puncture may be a most valuable means of diagnosis, although at times a negative puncture does not exclude aneurysm because of the possibility of the sac being lined with heavy coaguli.

Salinger and Perlman<sup>2</sup>, in their analysis of 227 cases of hemorrhage following pharyngeal abscess, state that in 70 per cent erosion of the internal carotid artery occurred.

**Diagnosis.**—In the presence of a suppurative process in the tonsillar or pharyngeal area, a spontaneous hemorrhage from that area should always be considered a serious complication. Most likely

cause for it is an erosion of one of the larger blood vessels in the adjacent surroundings. In many cases there is only one hemorrhage and in some instances it is of such magnitude as to prove

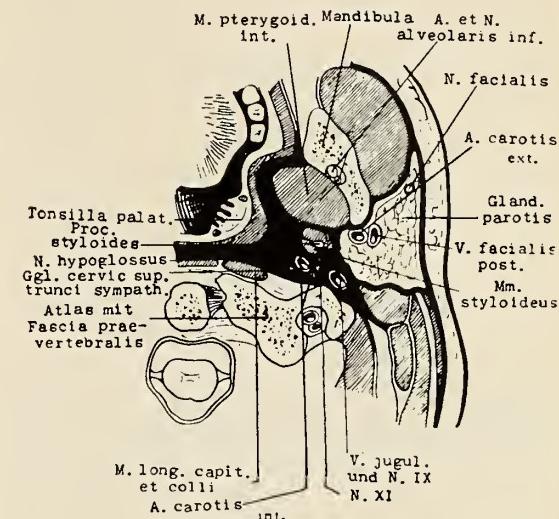


Fig. 1. Parotid recess and topography of parapharyngeal space. (After Corning.)

immediately fatal. But fortunately, like in the reported case, several hemorrhages occur at intervals and so give a warning of the impending disaster. Recurrent hemorrhages of fair magnitude in the presence of a peritonsillar or retropharyngeal abscess indicate involvement of a major vessel and no time should be lost to administer the proper treatment.

Brauer<sup>1</sup> has attempted to define the source of the hemorrhages from their character. He divided them into six groups.

1. Hemorrhage from the ear; false aneurysm of the internal carotid artery.
2. Sudden single foudroyant hemorrhage; false aneurysm of the internal carotid artery.
3. Several minor prodromal hemorrhages followed by a foudroyant fatal one; false aneurysm of the internal carotid artery. This group is differentiated from group 5 by persistent, ever-increasing, dense swelling in the throat or neck.
4. Several severe hemorrhages in succession; generally from branches of the external carotid artery.
5. Recurrent slight to moderate hemorrhages

due to local vessels of the tonsillar bed or the palate.

#### 6. Venous hemorrhage.

*Therapy.*—It is now the consensus that only drastic measures will prevent a fatal outcome. Ligation of the common internal or external carotid artery is the only therapeutic procedure worthy of consideration. Which vessel should be ligated will depend on the type of disease in each particular case. Taking Brauer's classification of types of hemorrhages, group 5, in which only minor hemorrhages occur, may be excluded; they can be controlled by local measures.

Skoog and Sercer pointed out the dangerous cases are those in which one or more of the following factors are present:

1. Spontaneous hemorrhage or hemorrhages so severe as obviously not to be arising from a minor vessel.
2. A protracted course in which the swelling fails to disappear following a previous incision.
3. Hematoma of the surroundings as evidenced by submucous discoloration or tense, brawny swelling.
4. Increasing pain, swelling locally and in the neck and trismus, despite incision of the abscess and long after the course of a normal peritonsillar abscess has been run.
5. The presence of pulsation in the peritonsillar area.

If any of these factors is definitely established the carotid sheath should be exposed and a search for the source of the hemorrhage made if the condition of the patient is not too critical. If the bleeding is due to one of the branches of the external carotid artery, ligation of the latter will control the hemorrhage. If such a condition is not found, the only safe procedure is ligation of

the common artery. As previously mentioned in 70 per cent of them erosion of the internal carotid artery was the cause of the hemorrhage. Therefore, if there is the slightest doubt as to which artery is at fault, it is much safer to ligate the common carotid artery. Naturally, everybody realizes the seriousness involved in the ligation of the common or internal carotid artery. Such a sudden interruption of the blood supply to one cerebral hemisphere might be followed by serious complications or might be even fatal.

The serious cerebral complications produced by ligation of the common carotid artery are due to the sudden shutting off of the arterial supply to half the brain. It is the consensus that immediate hemiplegia is due to anemia of the brain, although there are some authors who maintain that the modus operandi of this complication has not been definitely proved.

Nevertheless, most of the authors are in practical agreement that early hemiplegia is the result of anemia of the brain, and that this complication offers a better prognosis than delayed hemiplegia, which they believe is due to thrombosis or an embolus which leads to softening.

On summing up this phase of ligation of the common carotid artery, one finds on the basis of the accumulated experience of a century that 25 per cent of all ligations of the common carotid artery, regardless of age or ailment, are accompanied by serious cranial complications of which at least one-half are fatal.

When confronted with a serious mass hemorrhage due to erosion of the carotid artery, one has only one alternative, that is ligation, in spite of the complications which may arise from it. Ligation at least offers recovery while no intervention means certain death.

#### References

1. Brauer, Werner: *Blutungen nach Tonsillenerkrankungen*. Dresden: Uhlmann und Sohn, 1933.
2. Salinger, Samuel and Pearlman, S. J.: Hemorrhage from pharyngeal and peritonsillar abscess. *Arch. Otolaryng.*, 18: 464-509, (Oct.) 1933.

#### EVOLUTION IN MEDICINE

From the medicine man of old to the modern clinic is a long way. Again and again mystery after mystery has been probed; again and again the utterly impossible has won acceptance against ancient truth; again and again the reach of medicine has been enlarged. The doctor's craft, with triumph after triumph to its credit,

is still on its way. Yet it is set within a larger problem of human well-being which up to now has hardly been explored. It will not be solved until we learn to make culture in all its color and drama an instrument of health.—WENDELL BERGE, Assistant Attorney General of the United States, Pub. Health Rep., (Jan.) 1945.

# CLINICAL-PATHOLOGICAL CONFERENCE

## PUNCH BIOPSY OF THE LIVER

RUBEN F. SCHMIDT, M.D., and ARTHUR H. WELLS, M.D.  
Duluth, Minnesota

The diagnosis and prognosis of hepatic disease is frequently difficult or impossible for the clinician unaided by x-ray or laboratory procedures. Even after the use of roentgenograms and the various liver function tests available today only a limited knowledge of the disease process can be gained by these methods. Liver function tests usually inform as to physiological activities

sies from the literature in which a variety of methods were used with a result of 1 per cent fatality as a result of the biopsy. One hundred sixty aspirations of the liver were performed by Iverson and Roholm<sup>6</sup> (1939) in Denmark without complications. Baron<sup>1</sup> (1939) reported thirty-five cases of aspiration biopsy without complication. Following his original publica-

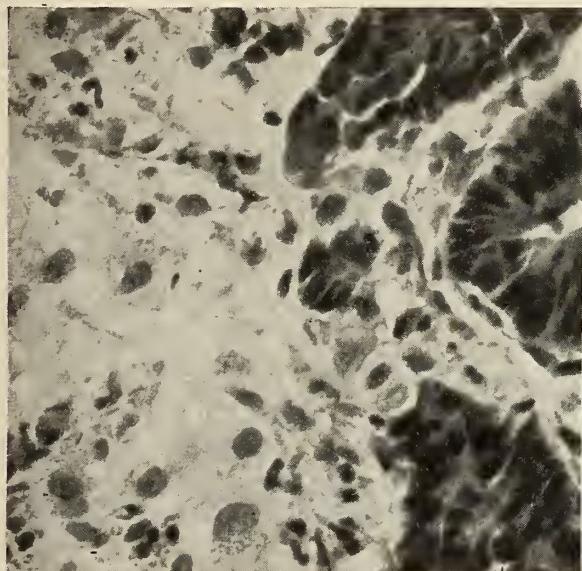


Fig. 1. Case 19. Hyperchromatic, anaplastic gland forming columnar epithelial cells invading degenerated liver tissue.

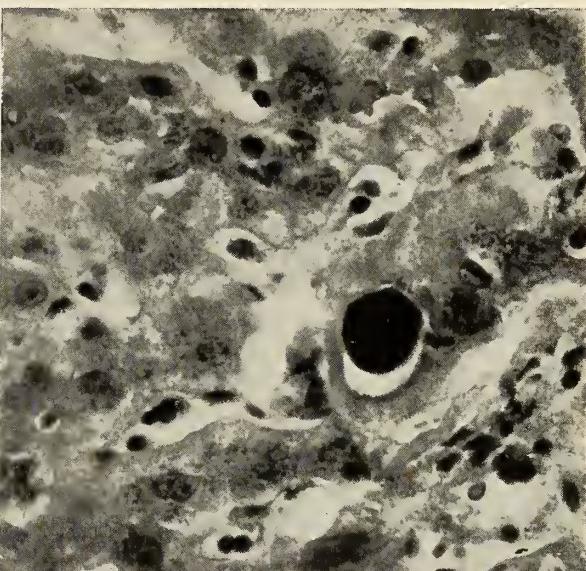


Fig. 2. Case 22. Large mass of inspirated bile in canaliculus also bile in cytoplasm of liver cells.

of the liver and hence fall far short of pathognomonic information. Frequently the total information obtained in a given case leaves the clinician perplexed and he is unable to establish with certainty the true pathologic changes in the liver. An exploratory laparotomy may be the recourse taken. In many such cases a suitable liver specimen can be obtained with the Vim-Silverman biopsy needle<sup>3</sup> to enable determination of the histopathologic alterations present at the biopsy site without resorting to a major surgical procedure.

Liver puncture has been practiced for a century in the treatment of cystic and suppurative disease of the liver and not until the last quarter of a century has the liver puncture become a recognized useful diagnostic procedure. Dible, McMichael, and Sherlock<sup>3</sup> collected 613 cases of liver puncture aspirations and biopsies

tion he had one fatality due to bleeding. In 1941 Tripoli and Fader<sup>9</sup> introduced the use of the Vim-Silverman needle in liver biopsy proclaiming a minimum of trauma to the liver and consequent bleeding from it. They had no serious complications of the fourteen examinations. One year ago Dr. F. W. Hoffbauer<sup>5</sup> of the University of Minnesota had performed seventy liver biopsies without serious complications. Many more have been performed since that time.

In this series of twenty-five punch liver biopsies the Vim-Silverman biopsy needle was employed. It is essential to detect any bleeding tendency by a determination of bleeding, clotting and prothrombin times. In general the intercostal approach was adapted. The needle was usually passed through the ninth intercostal space approximately in the mid axillary line and on through the complementary pleural space and diaphragm. To insure against passing through the liver and into the

From the Department of Pathology, St. Luke's Hospital, Dr. A. H. Wells, Pathologist; Dr. R. F. Schmidt, Resident.

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TABLE I. LIVER BIOPSY CASES

Case	Age	Liver Size	Site	Reaction	Clinical Consideration	Biopsy Diagnosis
1	61	5 cm. below RCM**	10 I.S.*	none	Cirrhosis or Carcinoma	Metastatic Carcinoma
2	62	5 cm. below RCM	9 I.S.	none	Cirrhosis, Carcinoma, or Cardiac decomp.	Cirrhosis, Severe
3	47	2 cm. below RCM	9 I.S.	mild pleuritic pain	Hepatitis	Hepatitis
4	85	5 cm. below RCM	9 I.S.	none	Carcinoma or Cardiac decomp.	Chr. passive congestion
5	20	2 cm. below RCM	9 I.S.	mild pleuritic pain	Hepatitis or common duct stone	Hepatitis-sulfa sensitivity?
6	19	Percusses to RCM	9 I.S.	mild rt. shoulder pain	Hepatitis	Hepatitis
7	15	Percusses to RCM	9 I.S.	mild pleuritic pain	Hepatitis or Appendicitis	Hepatitis
8	61	Percusses to RCM	9 I.S.	none	Cirrhosis	Cirrhosis
9	31	1 cm. below RCM	9 I.S.	mild rt. shoulder pain	Hepatitis	Hepatitis
10	30	Percusses to RCM	8 I.S.	mild rt. shoulder pain	Cirrhosis or Hepatitis	Hepatitis
11	68	To iliac crest	8 cm. below RCM	none	Cirrhosis, Carcinoma or Cardiac decomp.	Metastatic Carcinoma
12	59	Percusses to RCM	9 I.S.	none	Cirrhosis, Hemochromatosis, Carcinoma, Hemolytic anemia Syphilis, or ?	Cirrhosis
13	64	Percusses to RCM	9 I.S.	none	Cirrhosis, or Carcinoma	Cirrhosis
14	62	3 cm. below RCM	9 I.S.	none	Carcinoma of Stomach—Metastases?	Normal liver (2 metastatic nodules found in liver at surgery.)
15	68	Percusses to RCM	9 I.S.	none	Cirrhosis, or Carcinoma	Cirrhosis, Severe
16	48	Percusses to RCM	8 I.S.	mild rt. shoulder pain	Bronchiectasis, Chr. Empyema Heart disease Amyloidosis?	Normal Liver
17	41	5 cm. below RCM	9 I.S.	none	Stone in cystic duct; perforated peptic ulcer; appendicitis pneumonia, portal thrombosis, or hepatitis Miliary tuberculosis??	Hepatitis
18	51	Percusses to RCM	8 I.S.	none	Miliary tuberculosis??	Normal Liver (Postmortem: tuberculoma—brain)
19	59	To iliac crest	3 cm. below RCM	mild aching in region	Carcinoma or Cirrhosis	Metastatic Carcinoma
20	64	4 cm. below RCM	9 I.S.	none	Carcinoma or Cirrhosis	Normal Liver (Postmortem: metastatic carcinoma)
21	58	3 cm. below RCM	9 I.S.	mild pleuritic pain	Carcinoma, Cirrhosis, Syphilis, or Heart disease	"mild congestion of sinusoids"
22	62	Percusses 1 cm. above RCM	8 I.S.	none	Obstructive jaundice, Carcinoma	"obstructive retention of bile in canaliculi of liver"
23	86	3 cm. below RCM	8 I.S.	none	Severe Infection	Military Tuberculosis
24	54	7 cm. below RCM	9 I.S.	none	Carcinoma or Cirrhosis	Cirrhosis
25		6 cm. below RCM	9 I.S.	mild pain	Carcinoma	Carcinoma

\*I.S.—interspace.

\*\*RCM—right costal margin.

gall-bladder bed or other vulnerable structures, the needle was directed cephalad by approximately 30 degrees. If the liver was markedly enlarged and especially when nodules were palpable the subcostal approach was chosen. If the liver was found high in position as is frequently the case in older patients, then the eighth intercostal space was used. If the liver margins could be neither palpated nor percussed with certainty as was frequently the case in patients with marked senile em-

physema or with deformed chest then a biopsy should be performed only after considerable reflection as to the serious dangers of the test and the value of the examination. It is imperative that the technique should be practiced on several different cadavers before employing the procedure clinically. A 1 per cent novocaine solution serves to anesthetize the skin and underlying tissue. Following the infiltration with procaine using the same syringe and needle, the liver substance is en-

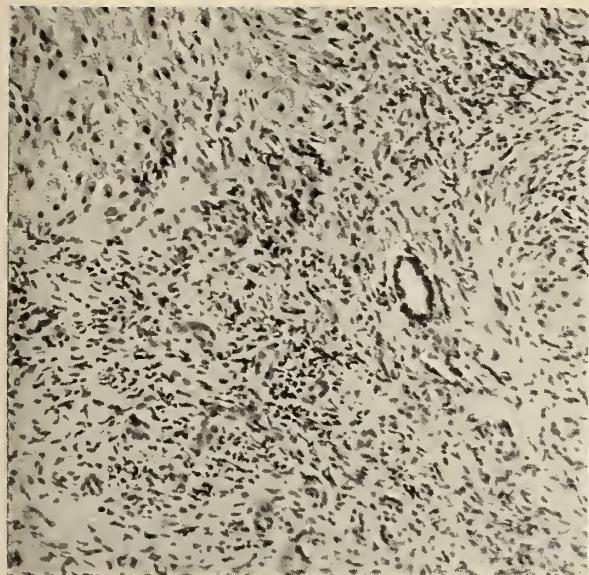


Fig. 3. Case 2. Extensive scar with degenerated liver cells.

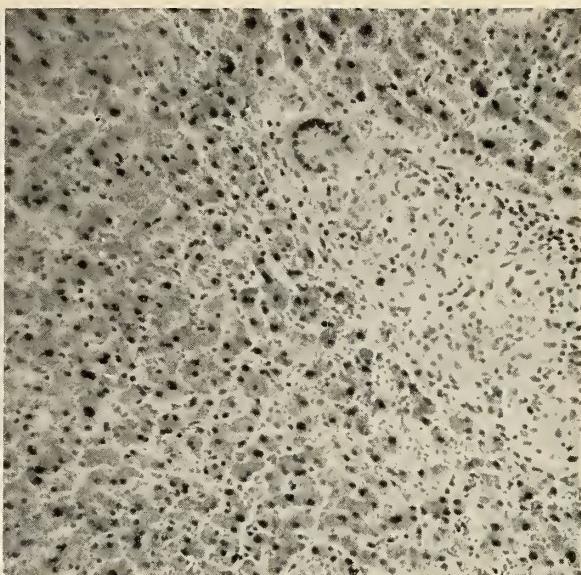


Fig. 4. Case 23. Typical miliary tubercle nodule.

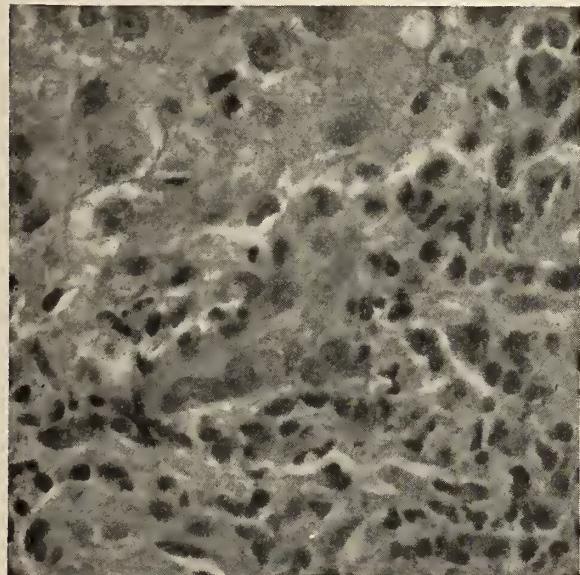


Fig. 5. Case 5. Neutrophiles and eosinophiles infiltrating portal areas with mild degeneration of liver cells.

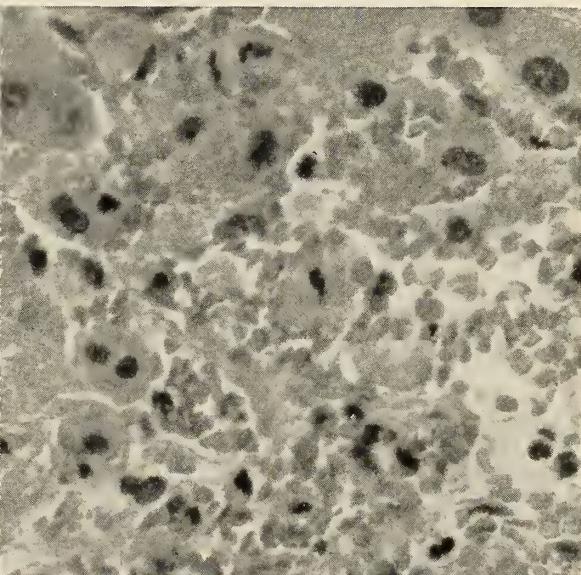


Fig. 6. Case 4. Congestion and dilatation of sinusoids with severe atrophy, degeneration and disappearance of liver cells in central zone.

tered and moderate suction applied; thus detecting the presence of liver abscess or hemangioma, both contraindications to the biopsy examination. The patient is instructed to hold his breath when the biopsy needle is advanced into the liver substance in order to prevent any movement of the liver which might further traumatize its surface or its structure and cause unnecessary bleeding. We do not favor the use of sedation and narcotics for fear of masking complications. The principal contraindications then may be listed as a bleeding tendency, abscess, hemangioma, or cyst of the liver, and uncertainty as to the exact position of the liver.

None of our twenty-five patients complained seriously and we experienced no complications. In those cases subsequently examined postmortem the biopsy site could not be found if the biopsy had been performed more than a week previously. However, even with the use of procaine the patient often sensed a little dull pain at the time of the biopsy and occasionally for several hours thereafter. This pain occasionally radiated to the right shoulder. Blood pressure readings and pulse were checked every two hours for at least twelve hours following the biopsy as a precaution against hemorrhage, the most common serious complication of the proce-

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dure reported in the literature. Infection, the second most common serious complication, was guarded against by surgical asepsis, a careful observation of details of technique in the performance of the test and repeated examination for peritonitis during the subsequent twenty-four hours.

From a review of our experience (Table I) it is obvious that any diffuse disease of the liver may be diagnosed with the plug obtained in the Vim-Silverman biopsy needle. It should be quite adequate for all cases of cirrhosis of the liver (Fig. 3) and acute hepatitis with jaundice (Fig. 5) (acute catarrhal jaundice). It is of great aid in the frequent cases of painless jaundice for the differentiation of a surgical from a medical condition. One might reasonably expect good results in those diseases involving the liver including schistosomiasis, miliary tuberculosis (Fig. 4), hemochromatosis, chronic passive congestion (Fig. 6) due to cardiac decompensation, long standing biliary obstruction (Fig. 2) with bile stasis in canaliculi, amyloidosis, cholangitis, fatty degeneration, and such malignant diseases as carcinoma (Fig. 1), Hodgkin's disease and leukemia with infiltration of the liver. Of course the malignancy may be missed by the biopsy needle. Acute hepatitis<sup>2,4,7</sup> whether it be due to bacteria, virus, chemicals or serum is practically always diffuse and should be recognized in the biopsy excepting in very mild cases where the mild toxic changes in parenchymal cells might be inadequate for a positive diagnosis.

**Conclusions:** Punch biopsies of the liver using the Vim-Silverman needle has proved to be a diagnostic procedure of great merit. Its simplicity as compared to the complexities of the many liver function tests is especially contrasting when the pathognomonic nature of the biopsy is considered. Considerable care in the selection, performance of, and postoperative care of the patients for the procedure is of considerable importance in the avoidance of hemorrhages and secondary infections as complications of the test. A summarized review of our twenty-five cases with liver biopsy is presented.

### References

1. Baron, Edgar: Aspirations for removal of biopsy material from the liver. *Arch. Int. Med.*, 63:276, (Feb.) 1939.
2. Cameron, G. R., and Karunaratne, W. A. E.: Carbon tetrachloride cirrhosis in relation to liver regeneration. *J. Path. & Bact.*, 42:1, (Jan.) 1936.
3. Dible, J. H., McMichael, John, and Sherlock, S. V. P.: Pathology of acute hepatitis. Aspiration studies of epidemic arsenotherapy and serum jaundice. *Lancet II*, 402, (Oct. 2) 1943.
4. Gaskell, J. F.: The changes in the liver in a fatal case of epidemic "catarrhal" jaundice. *J. Path. & Bact.*, 36:257, (Mar.) 1933.
5. Hoffbauer, F. W.: Personal communication.
6. Iversen, P., and Rohholm, K.: Aspiration biopsy of the liver with remarks on the diagnostic significance. *Acta med. Scandinav.*, 102:1, 1939.
7. McFarlan, A. M., Steigman, A. J., McMichael, John, and Dible, J. H.: Hepatitis following injection of mumps convalescent plasma. *Lancet*, 1:818, (June 24) 1944.
8. Silverman, I.: A new biopsy needle. *Am. J. Surg.*, 40: 671, 1928.
9. Tripoli and Fader: The differential diagnosis of certain disease of the liver by means of punch biopsy. *Am. J. Clin. Path.*, 14:129, (Mar.) 1944.
10. Watson, C. J.: Cirrhosis of the liver: Clinical aspects with particular reference to liver function tests. *Am. J. of Clin. Path.*, 14:129, (Mar.) 1944.

## TRAINING PLAN ON PACIFIC DISEASES

An overall plan for training all personnel on appropriate aspects of prevention, control, diagnosis and treatment of diseases common to the Pacific Area has been approved, according to Major General George F. Lull, Deputy Surgeon General.

The following training has been planned by The Surgeon General for personnel of medical units being redeployed:

The time allotted to Tropical and Preventive Medicine Problems in the Basic Officers Course at Carlisle has been increased, and specially qualified instructors have been assigned to carry out this phase of the program.

The present eight-weeks course in Tropical Medicine given at the Army Medical Center will be reduced to four weeks beginning probably in September and will deal only with diseases common to the Pacific Area.

It is planned that a two-weeks course of instruction in diseases of the Pacific Area will be conducted at Medical Field Service School, Carlisle Barracks, Pennsylvania, to begin on or about 13 August 1945 for unit surgeons, medical inspectors, chiefs of medical services, and other selected officers from units of the three major

forces being redeployed. Instruction will include the prevention, control, treatment, and diagnosis of malaria, dengue, filariasis, Japanese B.—encephalitis, kalaazar, scrub typhus, louse and flea-borne typhus, relapsing fever, plague, bacillary dysentery, amebiasis, schistosomiasis, cholera, salmonella infections, bacterial food poisoning, venereal diseases, trenchfoot, nutritional deficiencies, dermatological conditions and other miscellaneous disease problems to be encountered in the Pacific Area. It is planned to assign a group of highly specialized, well-qualified instructors to the Medical Field Service School, Carlisle Barracks, Pennsylvania, to handle the instruction in the two-weeks course.

Upon completion of this course of instruction, officers will be expected to conduct training programs in the appropriate aspects of the prevention, control, treatment and diagnosis of these diseases for all personnel present in their units during redeployment. A training guide is being prepared for use in this unit personnel training.

In addition, a supplementary program of instruction for nurses of units being redeployed will be conducted at the training centers to cover the nursing problems associated with the diseases to be encountered in the Pacific Area.

# HISTORY OF MEDICINE IN MINNESOTA

## NOTES ON THE HISTORY OF MEDICINE IN HOUSTON COUNTY PRIOR TO 1900

By NORA H. GUTHREY†

Mayo Clinic

Rochester, Minnesota

(Continued from the July Issue)

The fortunes of Brownsville after the war continued to improve until, in 1870, there were fifty stores, three hotels, two breweries, various saloons, two flour mills, two sawmills and a grist mill. Although in 1873 came a setback, when some of the residents refused to submit to taxation for a new brick schoolhouse, to cost \$10,000, and moved away, there were still a year later 600 persons in the village and more than 1,500 in the township. Paradoxically, the long and steady decline of Brownsville was caused by the coming of the Southern Minnesota Railroad from its northern right of way along the river; the tracks just at the water's edge damaged the steamboat landing; traffic from the river dwindled and the thriving town was reduced to a village once more. In 1880, in spite of the changed outlook, another physician, Dr. William W. Bell, a well-trained man from Pennsylvania, cast his lot with the village, succeeding Dr. Le Blond, and in the late eighties Dr. E. W. Bowles is said to have been in Brownsville. Dr. Bell and Dr. Riley were for a time the leading physicians of the community; perhaps when the affairs of Brownsville were at lowest ebb, they, like Dr. Le Blond, sought a better field.

*Crooked Creek Township*, between Jefferson and Brownsville Townships on the river, took its name from well-named Crooked Creek which traverses it. Inasmuch as record has not appeared of a resident physician within the borders, in either of the two villages, Reno or Freeburg, it is logical to assume that Drs. Sheldon, Le Blond, Riley and Bell and perhaps practitioners from Iowa lent their services to the sick. It is pleasing to assume that the presence of physicians in pioneer communities contributed to the maintenance of law and order; there is no doubt that without physicians, the township of Crooked Creek was afflicted, at least during the years of the Civil War, with a band of outlaws who established their headquarters on the Mississippi lowlands and lived on the plunder from their depredations among the law-abiding settlers. Finally their resort, Robbers' Roost, was stormed and the thieves were dispersed; some were drowned, some shot, and some sent to the Wisconsin State Prison.

*La Crescent Township*, the most northeasterly in the county, fronts on the Mississippi River, as does the village of La Crescent, which is at the mouth of the Root River, opposite La Crosse, Wisconsin. The first settler on the site of the village came in 1851 and in the next few years was followed by many other pioneers, all attracted by the beauty and apparent advantages of the situation, for the settlement lies in an elevated, crescent-shaped basin formed by the back-

†Member of the Editorial Department, 1916-1919; 1919-1939, personal secretary and assistant to the late Dr. William James Mayo.

ward sweep of the river bluffs from the north and their forward curve again to the river at the south. By 1856 the possibilities of the site had caught the attention of The Kentucky Company, of Louisville, Kentucky, who actively promoted their project, bringing settlers, among them the first resident physician, Dr. H. T. Fox, who subsequently was mentioned by Dr. G. J. Sheldon, of Mound Prairie, in his diaries. Although enterprises of various sorts sprang up in La Crescent and schools were established, notably Carr Academy and the La Crescent Female Seminary, the ambitious little town was not to achieve the brilliant future for which it hoped, in which it should be a city rivaling La Crosse. The disappointment was owing partly to lack of a direct steamboat landing; partly to the shortsighted and greedy policy of the promoters, who gave no opportunity to investors; and perhaps chiefly to the fact that the Southern Minnesota Railroad, instead of beginning its westbound tracks at La Crescent, unexpectedly started them a few miles south at the new village of Grand Crossing; it was nearly ten years later, in 1875, when the bridge was built over the Mississippi from La Crosse, that La Crescent was on the route. But if La Crescent Village did not achieve its dream, La Crescent Township more than compensated in becoming the great fruit and vegetable growing region of the state and the source of improved knowledge of horticulture and superior varieties of products. And even though by the late seventies the commercial undertakings of the village were marked by only one store, a hotel, a railroad station, the minimal number of wagon and blacksmith shops, and by empty buildings, there was place for a physician in the person of Dr. A. A. Anstey; Dr. Fox had died in 1875. Except for the coming of Dr. Franklin H. Whitney, in the middle eighties, other record of physicians in La Crescent has not appeared.

In the accounts of the early days of La Crescent Township there is included the following story of an incident that perhaps was typical of the hazards encountered by the settlers and of their need for medical aid:

Section 6 (La Crescent Township) received another settler in July, 1853, Johannes Tuininga, a native of Holland, locating in the southwest corner. He proved a permanent settler and was still living there in the early eighties. At an early day, when physicians were scarce on the west side of the river, his wife was bitten by a rattle snake. Having no money, he supposed it impossible to procure a physician, and so, in considerable agitation, he proceeded to apply the only domestic remedy of which he had heard. With a ton and a half of hay he had bought four fowls and had raised twenty-four chickens. These he had killed one after another, and laying them open, applied them in turn to the bitten part, but without any alleviation of the symptoms. While the family were in despair, a stranger was seen coming up the road. He was informed of the emergency and asked if he were not a physician, though Mr. Tuininga, honestly enough, told him beforehand that he had no money to pay one. The gentleman, who was H. M. Rice, of St. Paul, was not a physician, but he gave Mr. Tuininga \$10 and told him to go for one at once. The doctor (name not given; perhaps Dr. Sheldon of Mound Prairie, the nearest settlement) arrived and Mrs. Tuininga recovered. Mr. Tuininga never forgot this act of kindness, and when, years afterwards, he saw Mr. Rice's name on a ticket at the polls for Governor, he voted the straight ticket of that party, for the only time in his life.

*History of Houston County, 1919, page 159.*

There was another recorded incident of early days, bizarre, and eligible here only because it concerned a subject of scientific interest, which attracted a certain amount of attention to La Crescent. In 1864 a contributor, of La Crosse, Wisconsin, submitted to a dignified eastern medical journal a report under the title, "Remarkable case of fecundity,"\* in which it was stated that in 1861 the practitioner had delivered a woman living in La Crescent, Minnesota, of three children: that in 1862 he had delivered her of three more and in 1863 of yet another three. In January the journal published this interesting contribution from the West, but

\*Boston Medical and Surgical Journal, 69:453-454; 70:227, 1864.

in April a correction appeared, for the editor suddenly had become aware that he had been hoaxed: The reporting "physician" had proved to be a layman, editor of a La Crosse newspaper, who had succeeded only too well in his story of productivity in the fabulous new country.

*Hokah Township*, lying along the great river between La Crescent and Brownsville Townships, received, permanently or transiently, in the period from 1856 to 1896, inclusive, eleven physicians of whom record remains.

The first settlement in Hokah Township was made in 1851 by Edward Thompson and the village of Hokah was laid out by him and his brother early in 1855, although it did not become an independent village until 1871. Most beautifully situated on a crescentic ridge, dominated by Mt. Tom, the village commands scenic views in every direction, climaxed by surrounding peaks, which are mountains in all but altitude. The name Hokah was that of an Indian chief, whose village, according to tradition, stood on the spot occupied by the present village, and in those days the name was given by the Indians to the river also, later called the Root (a translation); still another name given to the river by the Sioux was Hutkan. Edward Thompson was a man of considerable engineering and mechanical ability, which he applied to utilize the water power of Thompson's Creek and the Root River. This water power was employed subsequently by the shops of the Southern Minnesota Railroad, from 1866 to 1880. In the latter year, the Chicago, Milwaukee and St. Paul Railroad Company having gained possession of the railroad, the shops were removed, with the result that the business interests of Hokah received a blow from which recovery was delayed and disappointing.

The first mention of medicine (by courtesy) in the village was in connection with the illness of Mr. Jerry Jenks, one of the early settlers of the town, soon after his arrival in about 1852. After some difficulty a practitioner was induced to come from a settlement in Iowa. He gave the patient "hydro-path treatment, which was quite popular at the time, but it proved ineffective and the man died." In the ensuing decade three physicians and a druggist were known in the township and village of Hokah. Of these, Dr. Charles Jenks (his relationship, if any, to Mr. Jerry Jenks, is not known), began his practice there in 1856. Presumably in this year also Jehiel Gregory, a druggist, came from Delaware County, New York. In 1857 Dr. Hamilton B. Train, about whom more will appear, settled in Hokah, and two years later Dr. Truman R. Humphrey arrived.

In the middle and late seventies, while Hokah Village still had the atmosphere of growth and prosperity, it attracted for a few years Dr. Dirk Van Krevelen, a Hollander of varied and adventurous career who is said to have moved with his family from location to location, combining on occasion business and professional interests, seeking new frontiers. His immediate contemporaries in Hokah probably were Dr. William W. Holden and Dr. S. C. White, both evidently men of ability and independent thought. These two practitioners were mentioned by Dr. G. J. Sheldon in his diaries, together with Drs. A. C. Gates, H. T. Fox, Cowles, J. S. O'Connor, J. T. Bowen and T. A. Pope, in other townships, of whom additional mention will be made. Dr. E. D. Stewart and Dr. E. W. Hammes are said to have practiced in Houston County, localities unnamed. Record has been sparse as to Dr. Hammes' years in southeastern Minnesota and has been entirely lacking with regard to Dr. Stewart.

Hokah continued to attract physicians even after the bustle of railroad shops

## HISTORY OF MEDICINE IN MINNESOTA

had departed. By 1883 Dr. Albert J. Carpenter, sometime of Sheldon, in the center of the county, had settled in Hokah. In the early nineties, at the beginning of his medical career, Dr. Edmund B. Johnston practiced there for a time before going on to Caledonia, and in this same period came Dr. J. R. Wilson. It was not until the spring of 1896 when the village once more offered opportunity, there being then no active resident physician, that a permanent practitioner opened an office in Hokah; Dr. Arthur M. Crandall served the community for six and a half years.

*Mound Prairie Township*, at the northern boundary of the county in the second row of townships from the river, first settled in 1853 and organized officially in 1860, was named, tradition states, by Dr. Chase, an early resident, because of a remarkable rounded bluff that rises in the midst of one of the township's wide valleys. In this region of unusual topography and productive farms, there was, in the early years before the inevitable exploitation of timber, a rich growth of black walnut along the valley of the Root River, which traverses the township with many undulations from west to east.

To the community of Mound Prairie in the township of this name came Dr. Giles J. Sheldon in 1856, as stated previously, to employ his skills, to acquire farm lands and to build the beautiful farm home which was his professional headquarters as well. The large residence, on a gracious rise fronting the road to La Crosse (now Federal Highway No. 16) half a mile from the settlement of Mound Prairie, still stands as the home of members of his family. In the fifties there grew up around the physician's home almost a settlement: for a time one Charles Chase (Dr. Chase?) operated a store on the Sheldon farm, and in 1858 a schoolhouse was erected opposite the Sheldon residence.

*Union Township*, lying irregularly to the south of Mound Prairie Township, was a surface evenly divided between hills and valleys. Although the official organization of this township, with a full quota of officers, including pound masters, did not become effective until April 5, 1858, the settlers, chiefly farmers, lumbermen and millers, smiths, wainwrights and other practical workers, had begun coming in 1853. In the absence of villages in the township, the settlements in the surrounding divisions of Mound Prairie, Brownsville, Mayville, Caledonia, and Sheldon gave sufficient places for sale and purchase, and evidently the physicians from those villages cared for the sick; in 1881, notably, Dr. W. W. Holden of Hokah, was serving as health officer in Union Township.

*Mayville Township*, south of Union, its northwest corner in the exact center of the county, around 1853 first received settlers, industrious, honest home-seekers typical of the builders of the entire county, who were quietly successful in their purpose. The village of Caledonia, chiefly in Caledonia Township, in one portion crosses the line into Mayville and, logically, the physicians resident in Caledonia, and there were many over a period of years, extended their practice throughout Mayville Township.

*Winnebago Township*, named for the Winnebago Indians who once roamed the territory, second division from the Mississippi, and *Wilmington Township*, third from the river, lie along the Iowa border. They are mentioned together here because they are contiguous, are of similar topography, and are equally fertile and well watered. They received their first settlers in the same year, 1851,

and were organized officially, at separate meetings, on May 11, 1858. They had community of interest in suffering together tribulation from storms, floods, blizzards, wolves and the fear of attack by Indians as, of course, had the other townships in varying degrees; in being a pathway for travelers who came southwest from Brownsville and northwest from Lansing and McGregor, two towns on the Mississippi shore in Iowa; and, most important, in sharing not only occupations but also a closely knit community of settlers in the region of Portland Prairie.

Near the southern border of the townships, extending from Winnebago into Wilmington and into the state of Iowa, Portland Prairie embraces several sections of land, and it was in or near this region that most of the earliest settlers took claims. The Prairie during 1854 received a considerable accession of pioneers, most of them from Rhode Island and Massachusetts, who settled between the community of Eitzen (not organized until around 1865), Winnebago Township, and the village of Portland Prairie, established in 1854 (later to become Wilmington, in Wilmington Township, when the post office was moved). This group of travelers, disembarking from a river craft at Lansing, without a definite idea of their destination except that they were going to Minnesota, first proceeded overland to the land office at Brownsville, where a few of them elected to stay. The remainder, among them Dr. Alexander Batcheller, voted to go on to Portland Prairie, of which they first had learned at Brownsville. Dr. Batcheller, the first physician to attend the settlers of Portland Prairie in the illnesses and injuries of pioneer life, evidently was a man equal to the problems and emergencies of the time and place; his name animates all historical narratives of Houston County as that of a moving spirit in all matters pertaining to civic development. If there were contemporary physicians in the two townships, record of them has not appeared. In the eighties Dr. George J. Cass, later in Caledonia, was in Portland Prairie.

In the third row of townships from east to west, which is comprised from north to south of *Houston*, *Sheldon*, *Caledonia* and *Wilmington*, the divisions of Houston and Caledonia, for reasons that do not appear definitely but that were probably the unusually rich farming land, favorable conditions for milling of all types and the promise of adequate transportation facilities that attracted many settlers, were supplied more generously with physicians than were any other portions of the county.

*Houston Township* claims as its first settler, Captain W. G. McSpadden, who on June 14, 1852, arrived at the forks of the Root River. Recognizing the site as one of potential commercial activity, Captain McSpadden promptly staked out his claim, although he did not take up his residence until two years later, when he was accompanied to The Forks or was followed there by many other settlers. In 1854 he opened the first regular store, bringing his goods from La Crosse, over the Mississippi River and up the Root River on a keel boat, of which he was both owner and pilot. Later on he returned to the Mississippi townships and his earlier occupation of ferrying, but for several years he continued his colonizing. In 1856 he plotted on his farm around the forks of the river the townsite of Winfield, which was the beginning of the village of Houston. Soon the settlement was growing and thriving. There were, chiefly owing to the initiative of Captain McSpadden, a flour mill, sawmills, a machine shop and an amber cane manufactory (this cane was a crop which for some years received intensive cultivation in Houston and Fillmore Counties), which pro-

## HISTORY OF MEDICINE IN MINNESOTA

duced many hundreds of gallons of syrup. There were soon other general stores, and the drugstore of W. H. Birdsell, who had come from Canada in 1857, a post office and a schoolhouse (school had been held first in the cabin of a settler). There was a ferry, whose rates were quoted earlier in this account, and even an active boat yard in which several steamboats were built. Ultimately, however, when the railroad came into the locality in 1866, a new Houston Village sprang up on the present site, a mile west, and The Forks, or Old Houston, or Lower Houston practically was deserted, as far as business was concerned. By 1870 the population of the township was 1075 and by 1880 the immediate community of Houston was the home of forty or more essential enterprises.

In this place of material promise and of increasing growth, whether Old Houston or New Houston, physicians were needed, and many came. One of the earliest was Dr. Timothy Arnold Pope, first of Pope's Prairie, south of Caledonia, and later of Yucatan and Sheldon; he remained a quarter of a century faithful to Old Houston. Of the same general period was Dr. P. T. Bowen and, for a time, Dr. Stewart V. Groesbeck, in association with Dr. Bowen. The seventies brought Dr. Isaac Whittington Timmons, early of Money Creek; Dr. Paul Bjornson, native of Iceland; and Dr. Henry Porter Johnson. In the early eighties came Dr. Edwin M. Sheldon and Dr. Gustav Erdmann; Dr. De Costa Rhines, later of Caledonia; and Dr. Cassius S. Cranson. In the nineties there settled in Houston Dr. Lewis K. Onsgard, native of Spring Grove Township, whose initial medical practice had been in near-by Harmony, Fillmore County, and the equally loved Dr. Otto F. Fischer, who earlier had been in Caledonia.

*Sheldon Township*, well in the interior of the county, beautiful, well watered, easily accessible by lovely valleys, gave promise of becoming the site of a thriving commercial settlement, the village of Sheldon. Founded by Julius C. Sheldon, of Suffield, Connecticut, plotted by Dr. Giles J. Sheldon (not closely related to J. C. Sheldon), the village, on Beaver Creek, which is tributary to the South Fork of the Root River, was the chosen home of many who strove for other than agricultural development of the region. As in other localities, the settlers represented various nationalities; Norwegian, Scotch, Irish, English, and American of mixed strains. Of the pioneers who came to the community, a few passed on to other parts of the state, but the majority remained, at least until it became evident, in 1866, that the Southern Minnesota Railroad would leave Sheldon Village to one side.

Into the community when its hopes were high, came its first physician, Dr. Timothy A. Pope, from Yucatan (and soon to return to Yucatan for a time before settling permanently in Old Houston), and a Dr. F. B. Hinkley, less active professionally, it is believed, who although physician and surgeon apparently was more occupied with his manufactory of "harvest bitters" than with the care of the sick. In 1858 The Reverend Rolland Fuller Sheldon, physician and clergyman, brought his bride to the village, and from Sheldon as a center these two, as home missionaries of the Baptist Church, for a few years were engrossed in their work of carrying medical aid and spiritual comfort to the settlers in a widespread territory. By 1878 Dr. Albert J. Carpenter, later of Hokah, had joined the community of Sheldon, and next after him, for a while in the middle eighties, came Dr. Cassius S. Cranson, later to be in Houston.

*Caledonia Township*, high and dry on a beautifully undulating prairie, was in the path of immigration westward and profited by its location. Its very

height and dryness proved, in the earliest years, to be a difficulty until adequate wells could be dug or drilled to supply good water to the rapidly increasing population, transient and permanent. The first settler came in 1851, the village of Caledonia was platted in 1853 and it soon became a stopping place, and consequently a business point of importance, for hundreds of homeseekers who were proceeding westward from the port and land office of Brownsville en route to homes in southwestern Minnesota.

In April, 1855, the county seat of Houston County was removed from Brownsville to Caledonia, where it has remained, and in the same year, on August 30, the first term of the United States District Court, Territory of Minnesota, convened in the first judicial district of Caledonia. The township was organized, like many others in the county and the state, on May 11, 1858, the day on which Minnesota was admitted to the Union; the village was not organized until 1870.

Educational interest, as well as civic pride, was high in Caledonia. The first schoolhouse in the township and the county was built in 1854, by subscription, as has been said, and in 1856 there was erected the building of the Caledonia Academy, authorized by an act of the legislature which was approved on March 1 of that year. One of the members of the academy's first board of trustees was Dr. Alexander Batcheller, of earlier mention, from Portland Prairie.

And not least among the achievements of Caledonia's citizens was a railroad. Although in 1866 the Southern Minnesota Railroad was completed as far as Houston Village, to the north, populous Caledonia for thirteen years more had only stagecoach transportation. It is recorded in the histories of Houston and Fillmore Counties that the initial proceedings toward realization of a local railroad were taken in November, 1873, by a small group of Caledonians who, with Thomas Abbotts as president, organized the Caledonia-Mississippi Railroad Company. Begun as a strictly local enterprise, the "Narrow Gauge" in 1874 was graded partially between the Mississippi River and Caledonia, but only after years of effort and discouragement and only after the people of Caledonia had voted a bonus of \$20,000 could there be effected arrangements for completion of the project (the road now to be called the "Caledonia, Mississippi and Western;" later the Reno-Preston Division) by the Chicago, Clinton, Dubuque and Minnesota Railroad, a company then becoming interested in extending its lines into Houston and Fillmore Counties. On September 26, 1879, "the first train entered the village of Caledonia amid the rejoicings of the people. Immediate steps were taken to push the enterprise to Preston and such was the energy displayed that on Christmas Day, the same year, the locomotive reached that point." Not until 1901 was this useful narrow gauge road made a standard gauge route.

It is not strange that Caledonia from the first attracted physicians and that its medical history in the county has been outstanding. In the earliest group of medical practitioners in the village and the township, and in the county, were Dr. John W. Albee, one of the colony who came to Portland Prairie from Rhode Island, Dr. M. J. Veiling (or Velling?), and Dr. Timothy A. Pope, then of Pope's Prairie, south of Caledonia. In the sixties came Dr. John Edwin Pope, of regrettably short career, nephew and student of Dr. Timothy A. Pope; Dr. John S. O'Connor, of vivid memory; Dr. Harvey B. Laflin, of indistinct record. One would like to assume Dr. Laflin's relationship to Eliakim Laflin and his wife Elvira, two of the earliest settlers, who lived near Eitzen in

Winnebago Township. Eliakim Laflin was one of the first road supervisors in the county; indeed, the first road projected, specified at the first meeting of the county board, on May 26, 1854, was to run from Brownsville by way of various new farms to the Iowa state line "near Eliakim Laflin's." And when, on May 11, 1858, the first town meeting was held, the Laflin home was the scene of the deliberations and Mr. Laflin presided.

To Caledonia in the early seventies there came Dr. George L. Gates, who since boyhood has lived in southern Minnesota and who, after a period of practice in Caledonia, moved to Winona. In 1879 came Dr. George Nye, who had previously for a year or two practiced in Riceford, Spring Grove Township; and in the late seventies and early and middle eighties, Drs. F. Castle, Herbert D. B. Dustin, William H. McKenna, Albert C. Gates, Andrew J. Christensen (who perhaps was much earlier). W. W. Freeman, Joseph Mark (from Russia), and Harry L. Piggins. The nineties brought, for varying terms, Drs. Leslie Avery; Edmund B. Johnston, from Hokah; De Costa Rhines, from Houston; Edward L. Hills (whether he actually was a resident is uncertain); Robert Y. Ferguson, William E. Browning and, last before the turn of the century, it is believed, George J. Cass from Portland Prairie.

*Wilmington Township*, the southernmost of the third vertical row of townships, was discussed earlier in association with contiguous Winnebago Township.

*Money Creek, Yucatan, Black Hammer and Spring Grove Townships*, in order as they extend from north to south, form the western portion of Houston County. Settled in the same period, beginning in 1852, in the main by hardy Scandinavian homeseekers, their farms, mills and business interests kept step. There is record of but few resident physicians in the northwestern part of the county. Obviously the services of the occasional physician who did practice there, together with the attendance of physicians from Houston and from Rushford, in Fillmore County, were available and adequate for the needs of the settlers of the region.

*Money Creek Township*, first settled in 1853, is a well-watered and well-wooded region of many fine farms and, in the early decades, of many mills. Once called Hamilton Township, after a state law was passed forbidding the use of a given title for more than one township or city in the state and it was found that there already was a Hamilton (in Fillmore County) in Minnesota, choice of a second name was obligatory for the township. It happened about this time that one of the settlers had the misfortune to drop his purse in a little stream when fording it near the hamlet of Clinton, which stood on the east bank, and that when he had spread out the wet paper currency on a bush to dry, a gust of wind swept the notes back into the water. All of the money was not recovered, a fact that suggested the name, Money Creek, for the stream, a title that so pleased the settlers as a body that they adopted it (in 1865) for both township and hamlet. In the settlement of Money Creek, for a time in 1870, when he first came to Minnesota, Dr. Isaac W. Timmons practiced medicine, and a note has appeared that in 1880 and 1881 Dr. Charles H. Wagner made this place his headquarters.

*Yucatan Township*, unnamed in 1852, received in that year as its first settler a man who, having read of explorations in Yucatan, Central America, made by a traveler and author (John L. Stephens) of surname similar to his own, was

inspired, it has been suggested, to bestow the title of Yucatan on the scene of his own adventure. Whatever the truth of this bit of history, Edwin Stevens had faith and energy. Active in various localities in the township and in adjoining townships, by 1856 he had platted the village of Yucatan (once Utica) on a townsite of forty acres. During that summer he completed five log buildings and a milldam and began work on a sawmill. Although he did not remain long thereafter, the name of his choosing was retained both for his village and for the entire township. In 1856 there came from Pope's Prairie, south of Caledonia, into Yucatan Township Dr. Timothy A. Pope, who was the first physician in Yucatan Village and who became the first postmaster in the post office which he secured for the settlement. In the late seventies the names of Dr. Oliver McGuffey and Dr. Gilbert Thomas were associated (noted in a single edition of a commercial directory) with Yucatan. The residence of these men in the village has not been confirmed.

*Black Hammer Township*, third of the four western divisions, and first settled in 1852, owes its name to a fortuitous incident and to the sentiment of a homesick pioneer. It is recorded that Knud Olson Bergo, one of the earliest settlers of the county, who lived just across the line in Spring Grove Township, one morning on looking to the north noted that in the night a fire had swept across the intervening prairie and over the face of the bluff in the background. Spontaneously, as he saw the darkened bulk, he said "Sort Hammer!" (black bluff). The name of a height at Slidre Valders, his birthplace in Norway. By fortunate judgment the name was preserved, changed only to use two languages. To another Norwegian pioneer, Torkel Aagensen, who was the second settler in Black Hammer Township, belongs the credit of beginning agriculture and horticulture in this section of the county, for it was he who broke the first ten acres of farm land in the township and who subsequently planted an orchard and harvested the first crop of apples ever raised in the locality. And this township, in addition to the substantial advantages which it possesses in common with all of Houston County, has the distinction of holding interest for geologists and anthropologists, who are said to have found in its northern portion traces of an unrecorded people.

The name of a resident physician has not been observed in the records of the township. Of the several practitioners from neighboring communities who undoubtedly gave professional aid to the settlers of Black Hammer township, one was Dr. Rolland Fuller Sheldon, of Sheldon Village, to the northeast, who during an epidemic of black measles that raged in the township in 1863, contracted the disease and died.

*(To be continued in the September issue.)*

# President's Letter

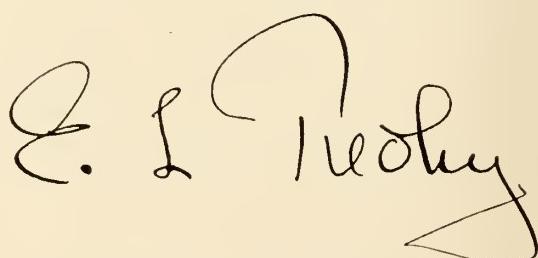
Many letters come to your President. Many are from personal friends and former interns now in service.

Plans for prepayment medical service are confusing to men too busy with war imposed duties to review many of the pamphlets and articles that appear in our journals or come out from our associations and special committees. Those maintaining that servicemen are learning how to fit into some future panel regimentation or civil service are certainly far afield of the acid opinions that come to me. Our Executive-Secretary, Mr. Rosell, has the same impression from personal letters and questionnaires. Nevertheless, that argument is freely used by the proponents of the Murray-Wagner-Dingell Bill.

They claim that this security and health legislation is nothing more than prepayment for health services imposed on a national level; that there is no intention of changing the relationship of patients and physicians. No matter what the intention of social legislation planners may be, they cannot be expected to see through to the ultimate dislocations that follow any universal schedule designed for all our greatly varying states, not to mention the divergent interests of farmers and industrial workers, closely packed urban centers or thinly populated districts.

The recent political turnover in Great Britain is certain evidence that mass experiments involving health, governing private ownership and statutory regulation of work and commerce, are to be decisively extended (Beveridge Plan). It is to be hoped that our political leaders may be less precipitate.

Much of our State is rural. Fair-minded people make up our population. It is not easy to impose upon farmers and those serving them the methods of caring for the sick that large industrial plants find advantageous. Note the trouble we are having with the EMIC program, and that is only a start. An alert, adequate and experienced doctor in one of our southern counties writes that he is now told whom he may call in consultation for obstetrical problems. Is such irksome restriction necessary for any nationally devised health aid? If so, we should all study and support prepayment service schedules on the state level.



President, Minnesota State Medical Association.

# ♦ Editorial ♦

CARL B. DRAKE, M.D., *Editor*; GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

## CHEMOTHERAPY OF TUBERCULOSIS

SEVERAL sulfonamide compounds possess slight bacteriostatic activity against the bacillus of tuberculosis but in no instance has this been sufficiently marked to foster hopes of clinical application. Drugs of the sulfone series (promin, diasone) are active against experimental tuberculosis of guinea pigs but the toxic potentialities of available drugs in this group restrict their use for human beings to topical application in treatment of superficial lesions of tuberculosis. Although promin in a jelly vehicle recently has been approved for distribution by the Federal Drugs Administration, no fully convincing evidence of its therapeutic efficacy has been submitted as yet. Promin also has been released for parenteral administration in treatment of leprosy and this solution has been utilized in nebulized spray for treatment of tracheobronchial tuberculosis, but not in a sufficient number of cases to prove its effectiveness.

A third group of interesting compounds (heterocyclic sulfones) is represented by promizole, which is effective in treatment of experimental tuberculosis of guinea pigs, but clinical trials so far have revealed inadequate evidence of therapeutic efficacy. Promizole, when given orally, is distinctly less toxic to the human being than are the diphenyl sulfone compounds, such as promin and diasone.

Several antibiotic substances have been described in the past twenty-five years which are effective against *Mycobacterium tuberculosis* in test-tube experiments. Only one of these has as yet demonstrated an ability to arrest the progress of tuberculosis experimentally induced in guinea pigs. This substance is derived from cultures of a soil-inhabiting fungus and is called "streptomycin." It is highly effective in treatment of experimentally infected guinea pigs but previous disappointments with other substances should temper any enthusiastic predictions as to clinical applications of this drug in tuberculosis. Streptomycin is difficult and expensive to produce and the extreme scarcity of the material will be a

restraining influence on clinical studies for many months to come.

Many forms of tuberculosis in man tend to improve spontaneously and this fact must constantly influence judgment of apparent chemotherapeutic effects. The granulomatous tissue responses to chronic tuberculous infection may offer a serious obstacle to penetration of bacteriostatic substances. Most antibacterial agents are not bactericidal but act by restraining multiplication of the pathogens. Hence the rapidity of the patients' recovery will depend on natural reparative mechanisms, which are slow in tuberculosis. The probable longevity of tubercle bacilli may also be a deterrent factor to rapid healing of lesions, even in the presence of an adequate concentration of a bacteriostatic agent. Despite these theoretic handicaps it must be emphasized that steady progress has been maintained in the search for an effective and safe chemotherapeutic or antibiotic agent in tuberculosis.

The beneficial effect of rest therapy, usually in the planned environment of a sanatorium, and the corrective collapse measures which remove mechanical handicaps to healing are thoroughly established as effective remedies in treatment of tuberculosis. No patient should refuse or postpone acceptance of these measures because of unreliable rumors of the imminent availability of a chemotherapeutic drug or antibiotic agent.

Patients are frequently very eager to receive experimental drugs, even when hope of benefit appears to be remote. Usually it is impossible to receive such drugs under these circumstances because of legal restrictions which have been imposed in recent years. These laws are designed to prevent unwise distribution of drugs whose safety may not have been determined and also serve to conserve rare and valuable drugs for essential research purposes. Investigators receiving experimental drugs may not share their supplies with other physicians and manufacturers must restrict distribution of such drugs to research institutions.

When the requirements of the present war

## EDITORIAL

have been met, it is ardently hoped that materials and talent will be diverted to research which may lead to improved methods of treating tuberculosis. This disease claims more lives than war, is similarly crippling and also selects its victims from the most productive age groups of the human race. No expenditure of effort, however great or prolonged, would appear excessive if it contributes toward the eventual conquest of the great white plague.

H. CORWIN HINSHAW, M.D.  
WILLIAM H. FELDMAN, M.D.

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### LIMITATIONS OF INTRAVENOUS UROGRAPHY

**I**NTRAVENOUS urography is an established method of outlining the renal pelvis, ureters and bladder on a series of x-ray films during the renal excretion of an iodine containing solution introduced into the venous circulation. In this way important information may be obtained concerning the functional and anatomical state of the organs of the urinary tract. The method is readily available wherever there is x-ray equipment and may be safely used in almost any patient except in the presence of renal insufficiency and hyperthyroidism. The value of the method rests entirely upon proper interpretation of the films and careful correlation of these observations with the history of the patient's illness and the results of general and other special examinations. The method is useful in the differential diagnosis of abdominal pain, the discovery of renal anomalies and the diagnosis of hydronephrosis and calculus disease. Nevertheless there are certain limitations to its value as a diagnostic procedure. Rapid or slow excretion of the contrast solution results in inadequately filled renal pelvis and ureters and unsatisfactory x-ray films. Even when the outline of the urinary passages is the best that is obtainable by this method, early lesions of renal tuberculosis, renal tumor and ureteral and vesical neoplasms may not be visualized.

Realizing these shortcomings, the careful clinician will require corroboration of the intravenous urogram by means of cystoscopy and retrograde pyelography whenever the clinical picture suggests the possibility of any of these lesions. Certainly these conditions will not be overlooked if all cases of hematuria and persistent pyuria are submitted

to instrumental examination of the urinary tract before a final diagnosis is made.

Proof that the findings in the intravenous urogram may be misleading in cases of hematuria is illustrated in a recent case. A female patient reported the passage of grossly bloody urine and the absence of pain or any other complaint. Intravenous urography showed an enlargement of the lower pole of the left kidney, considerable medical displacement of the left ureter and normal bladder outline. These findings suggested the diagnosis of a solitary renal cyst and were believed to explain the hematuria, especially in the presence of a normal bladder shadow. Surgical removal of the renal cyst was carried out from which the patient recovered. One year later she again noticed grossly bloody urine and also reported the gradual development of bladder irritation during the preceding three months. Cystoscopic examination revealed an infiltrating carcinoma of the posterior bladder wall. Suprapubic exploration showed extension of the tumor to adjacent pelvic structures and therefore inoperable. It is assumed that discovery of the tumor by cystoscopy one year before when the patient first presented herself would have permitted removal of the growth by segmental resection or its destruction by electroresection, coagulation and radium.

PHILIP F. DONOHUE, M.D.

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### EPIDEMIC OF RINGWORM OF SCALP

**A** WARNING of the imminence of an epidemic of ringworm of the scalp in children has recently been given by Layman in the May issue of MINNESOTA MEDICINE. In the June issue of *The Journal-Lancet*, Lynch has very timely emphasized that the incidence of this infection in St. Paul, Minnesota, has reached serious proportions.

Physicians in this region must be prepared to cope adequately with the problem. The return of children to school is not far off. That a method of early detection on a large scale and with minimum cost (the Wood light) is available has been demonstrated by many investigators.

The epidemic has been spreading westward from the East Coast over a five-year period and possibly has not yet reached many of our communities. Screening of migrant school children before further dissemination of this infection should be immediately started. All physicians in

direct or indirect contact with school children should be on the alert. Certainly prophylactic measures, in which cases of epidemic ringworm of the scalp new to their particular communities are segregated from other children, are much easier than the x-ray epilation of the scalp required for many children when the epidemic is in our midst.

Full co-operation from the Minnesota Department of Health will be given to any physician who requests specific information necessary for the prevention, diagnosis and treatment of this infection.

MERRIAM G. FREDERICKS, M.D.

### WHITHER BOUND, INTERNIST?

INTERNISTS must have read with great amusement and approval the editorial in *Surgery* for August, 1944, by Dr. Thomas Findley. Every internist should read this editorial. Besides the delight in Dr. Findley's juxtaposition of surgeon and internist it will give the latter pause.

Just what is the status of the internist at the present time?

Dr. Findley tells us how the surgeon looks at him. To the public he is a doctor "who does not operate." To the general practitioner he is a person who has more facilities to study and probably more knowledge of certain diseases. To the hospital boards he is an unknown quantity. The internist himself feels that he has lost his ranking position in the hierarchy of medicine. He realizes the surgeon dominates the field.

With the discovery of anesthesia and the introduction of asepsis, the surgeon has gradually evolved from an anatomical mechanic to a full-fledged physiologist, a technical expert and dramaturgist. He is a far more successful therapist in the eyes of the layman and to himself. This is because his material lends itself to such a conclusion.

There is a unity in surgical practices. It is blood, pain and force. Because of this unity the surgeon has been able to dominate the hospitals. There is no cohesion in medical practice. It consists of persuasion, education, readjustment; its diversity is centrifugal.

Let us examine the Minneapolis hospitals. Excepting the teaching hospitals, they are all operated mostly on the basis of surgical practices.

None of these hospitals has a medical floor or section. Why is this so? It is due entirely to the meekness of the internist. He is so immersed in the dialectics of his work that even his rightful position in the hospitals has disappeared unnoticed by him. To regain even this semblance of recognition he must combine in an aggressive group. With a united front he can persuade the hospital boards to recognize the importance of the grouping of patients. The first step toward this was accomplished when seven hospital boards in Minneapolis classified their staffs according to the respective specialties. The next move in the internist assertiveness is to educate the boards to appoint admitting officers who should be instructed (and backed by the board) to admit only such patients to the specialist's service for which he is classified. This step, if successful, will at least afford the internist the hospital recognition he has lost in the terrific momentum of surgical pressure and development.

It is only through hospital recognition that the internist can recapture some sort of niche in the hierarchy.—H. L. U.

### A DEPARTMENT OF NATIONAL HEALTH

MANY years ago the American Medical Association advocated the establishment of a Department of National Health with a Secretary of Health as a member of the Cabinet. The medical profession has been advocating the advisability of such a procedure ever since but to no avail.

It would seem advisable that most of the thirty-five health activities of the Federal government be consolidated in one department instead of having them scattered, as at present, in various departments. Much duplication might well be avoided thereby.

On January 11, 1945, H. R. 1391, a bill to establish a Department of National Health, was introduced in the House of Representatives by the Hon. A. L. Miller of Nebraska. The bill has been referred to the Committee on Expenditures in the Executive Department and it is to be hoped that it will receive favorable consideration. It would doubtless be of assistance to Dr. Miller if physicians who approve the idea of a Department of National Health would write him to that effect.

# MEDICAL ECONOMICS

Edited by the Committee on Medical Economics

of the

Minnesota State Medical Association

George Earl, M.D., Chairman

## MEDICAL CARE PLANNING IN HIGH GEAR

That there will be no summer slump in the councils of the doctors charged with the complicated task of whipping the Minnesota Medical Care Plan into shape is evidenced by the fact that meetings and field trips for the purpose of exploring all available data are very much in the current scheme of things.

June 17 the Committee on Organization, of which Dr. B. J. Branton of Willmar is chairman, met, at which time the following committees were selected: Committee on Articles of Incorporation, Constitution and By-Laws, Dr. S. W. Watson of Royalton, chairman; Contracts, Premiums and Benefits, Dr. B. S. Adams of Hibbing, chairman; Administration, Dr. R. W. Morse of Minneapolis, chairman, with Dr. W. C. Chambers of Blue Earth, vice-chairman; and Finance, Dr. O. I. Sohlberg of Saint Paul, chairman.

Accompanying Dr. Branton, ex officio member of the quartet, to Detroit recently were Doctors Adams, Sohlberg and Chambers. The purpose of the trip was to observe the outstandingly successful Michigan Medical Service Plan firsthand. Recommendations made by Michigan experts on the basis of their experiences in the field will be carefully weighed.

Dr. Adams called a meeting of his committee on July 1 at Saint Paul, immediately following his return from Detroit. This committee is now hard at work making comparative, analytical studies of various Commercial Insurance, Blue Cross and Medical Service contracts.

It is hoped that by the first of September, after a great deal of painstaking exploration by subcommittee members, they will come up with some concrete recommendations to be presented to the Committee-of-the-whole.

## VETERANS MEDICAL ADVISORY COMMITTEE PROPOSED

Appointment of an advisory committee of outstanding members of the medical and related professions to advise the President and the Administrator of Veterans Affairs with respect to the formulation of programs to provide medical care and hospitalization for veterans, was proposed in a bill introduced in the Senate by Senator Henrik Shipstead on June 25.

Reflecting the vein of much of the current thinking on the subject the Senator commented: "There is one point on which all Americans will agree, and that is that the medical service provided for returning veterans should be the best. Nothing short of this will be acceptable. Unfortunately, the people have reason to believe that this is not the case. Charges have been made by a variety of investigators which lead to the belief that medical care provided by the VA is on a standard far lower than that prevailing in ordinary practice in the United States."

## Sharp Increases in Medical Care for Veterans Seen

Citing the recent report of the Senate Subcommittee on Wartime Health and Education of the Committee on Education and Labor, the Senator said: "This report reveals that the number of veterans who will incur disabilities in the present war can only be roughly estimated, but probably will not be less than 1,500,000 or even, 2,500,000. There are at present 350,000 veterans of World War I who are receiving compensation for disabilities incurred in service" (Statistics reveal that for every five veterans of the first World War, VA hospitals have admitted three patients: 4,757,00 veterans and nearly 3,000,000 cases).

"In addition to the veterans who have been disabled in this and previous wars, there will

be those who have not incurred injuries in the service but for whose health the nation will undoubtedly feel responsible. The number, according to this report, may well be 20,000,000, or one in every seven of the total population. Veterans and their families may eventually comprise from one-third to one-half of our total population."

Quoting the Senator further: "It is my opinion that an advisory committee should be established and consulted about a hospitalization and medical care program that can give to the veterans the very best hospital facilities and medical care that the best trained men in the medical profession can give them.

"There is not merely a matter of medical care and treatment involved, but also the expert management of hospitals. I believe that the highest and most experienced men in the field of medicine and hospitalization should be consulted, with the view to having their wide knowledge and long experience in all parts of the country available for consultation and advice to the end that the best possible facilities can be insured for the care of these returning victims of the war."

### **300,000 BEDS EVENTUAL GOAL**

That the problem posed in the handling of VA affairs is a complicated and far-reaching one, is well borne out by the fact that the Administrator of VA affairs foresees a need for 200,000 beds soon after the war ends. Some 91,000 are available now and 14,000 more are to be built next year. When peace comes, the Army and Navy are to transfer facilities with 100,000 beds to VA. This is expected to take care of immediate needs. However, as years pass and veterans grow older, the load will increase and it is estimated that within thirty years following the war an additional 100,000 beds will be needed.

All this, obviously, will run into huge sums of money. Annual operating cost of veteran hospital facilities and old soldiers' homes last year exceeded \$75,000,000. This year's costs are expected to rise to \$98,000,000 because of the influx of World War II veterans. Under the GI Bill of Rights, total construction outlays of \$500,000,000 have been authorized which will make possible the eventual construction of the additional beds for which the need is anticipated.

### **MINNESOTA VETERANS' HOSPITAL AT FULL CAPACITY**

At the Veterans' hospital at Fort Snelling the seams are fairly bulging with the largest number of patients ever to be hospitalized in that institution since it was established. According to Carl D. Hibbard, manager, there are 735 veteran-patients at the hospital at the present time, leaving room for only three more. While the hospital has a bed capacity of 788, under government regulations the hospital must maintain 59 beds for emergencies.

To relieve the load there, district offices, which will have at least one full-time doctor on their staffs, are contemplated being set up as soon as the necessary facilities can be secured at Saint Paul, Minneapolis, Mankato, Duluth, Brainerd and Virginia, Mr. Hibbard has announced.

### **GIFT FOR REFRESHER TRAINING RECEIVED**

The University of Minnesota was established recently as one of the principal centers for refresher training of physicians who have been in military service to refit them for civilian practice, when the W. K. Kellogg Foundation granted the medical school \$250,000 to be used for such training over a period of five years.

Training to be given such men, according to Harold S. Diehl, M.D., dean of the Medical School, will consist of three eight-week periods or blocks of courses, generously supplemented by work in hospitals with actual patients.

Courses will be in the center for continuation study and at the medical school. The refresher training will be under the general supervision of Dr. William A. O'Brien. Success of his courses was a principal reason for this large grant to Minnesota.

Ancker hospital, St. Paul, will provide a large share of the hospital service, Dean Diehl has announced, although other programs will be carried out at University Hospitals and Minneapolis General Hospital.

Before the program ends, it is predicted it will be one of the earliest activities in the prospective Mayo Memorial building. This is one of the first grants made by the Kellogg Foundation to a state institution outside of Michigan.

## SUPREME COURT VOIDS MEDICAL BOARD

The Minnesota Supreme Court recently declared unconstitutional a provision of the Workmen's Compensation law, passed by the 1943 legislature, which provided for creation of a medical board to determine controverted or disputed medical issues in occupational disease cases.

The section voided by this action of the Supreme Court provided for a medical board of three doctors of medicine selected from a panel of fifteen nominees chosen by the Dean of the College of Medicine of the University of Minnesota, the council of the Minnesota State Medical Association and the Governor of Minnesota.

Ten of these nominees were to be doctors of medicine with at least five years' experience in the diagnosis, treatment and care of industrial diseases, and five, doctors of medicine with at least five years' specialization in the field of x-ray diagnosis and treatment.

Under the statute, the Industrial Commission was authorized to furnish each party to the proceeding a copy of the panel of doctors, together with a request that each party select one doctor from this panel; and that the two doctors, so selected, choose a third doctor to constitute the medical board.

### Medical Board Procedure

The medical board was authorized to examine the employe, including x-ray examinations, hear and examine witnesses and make such other examinations as it deemed necessary to a full presentation and understanding of the medical issue before them. Immediately after the conclusion of such examinations and hearings, it was directed to file its findings and conclusions with the industrial commission, signed by all the members of the board participating. The findings were to state, among other things, whether the employe had been afflicted with an occupational disease within the provisions and definitions of the Occupational Disease Law, and was also to include the names of the doctors who appeared at such examinations and hearings, and such medical reports and exhibits as were considered by it, its findings to be binding on the industrial commission.

However, there were no provisions under the law that a transcript of the evidence upon which the board's findings were based be filed with its report. On that premise, the Supreme Court

ruled the medical board, as set up, to be unconstitutional for the reason that it denied a claimant for compensation the right of full review guaranteed him by the workmen's compensation law under the "due process" clause in the statute.

### OD Law Drawn Up After Careful Study

The Occupational Disease Law, as it was passed by the 1943 Legislature, was drawn up after careful study by an Interim Committee set up by the state senate and house. This committee consulted frequently with members of the industrial commission who were well versed in the subject. It was felt that in the creation of this board of medical specialists in the field of industrial disease, both the employe and employer would have recourse to the most fair, unbiased and expert judgment obtainable in the settlement of cases in dispute on subjects that were too technical for lay persons to pass on accurately.

### Will Revert Back to Former Practice

With the elimination of the medical board, the statute, as it now stands, will permit the industrial commission, or a referee within the commission, according to established practice, to take testimony of *one* physician for each party on the question of occupational disease. If the commission or the referee hearing such evidence is unable to determine whether a claimant suffers from an occupational disease within the provisions of the statute, then the commission or the referee conducting the hearing may, upon his own motion, designate a neutral physician in good standing to examine the injured person and report his findings, which, in addition to other evidence, will be weighed by the commission or referee as competent evidence in determining this issue.

## MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

**Julian F. Dubois, M.D., Secretary**

**Minneapolis Physician Fined \$831 in the United States District Court**

*Re United States of America vs. Matthew Eich.*

On June 28, 1945, Matthew Eich, M.D., forty-seven years of age, 1002 Donaldson Building, Minneapolis, was sentenced by the Hon. Matthew M. Joyce, Judge of the United States District Court to pay a fine of \$831 or be committed to jail until payment of the fine. Dr. Eich paid the fine. The sentence was imposed following Dr. Eich's entering pleas of guilty to eight separate

criminal charges of collecting rent on residential properties owned by Dr. Eich in excess of the Office of Price Administration's rent regulations. On the other seven criminal informations Judge Joyce continued the imposition of sentence and placed Dr. Eich on probation for two years.

Dr. Eich has been involved in numerous difficulties with the law dating back to 1936. On March 11 of that year, Dr. Eich was sentenced to pay a fine of \$25.00 or serve twenty days in the Minneapolis Workhouse after having been found guilty of violating the state health laws. In that case Dr. Eich was charged with furnishing false information in a death certificate. On January 30, 1939, Dr. Eich paid a fine of \$50.00 in the Municipal Court of Minneapolis, following his plea of guilty to a charge of cruelty to animals. Dr. Eich had been arrested in connection with the poisoning of a neighbor's dog. Dr. Eich took the case to the Supreme Court of Minnesota where he lost. On March 3, 1945, Dr. Eich paid a fine of \$10.00 in the Municipal Court of Minneapolis on a charge of coercion. The charge was based on Dr. Eich's cutting a hole in the bathroom wall of a fourplex owned by Dr. Eich. It was claimed that Dr. Eich cut the hole in order to force the tenant to move.

Dr. Eich's activities are under investigation by the Minnesota State Board of Medical Examiners to determine whether or not Dr. Eich should be disciplined by way of a suspension or revocation of his license to practice medicine.

#### **Minneapolis Woman Pleads Guilty to Practicing Massage Without a License**

*Re State of Minnesota vs. Florence M. Johnson  
(Massage).*

On July 6, 1945, Mrs. Florence M. Johnson, fifty-three years of age, 3852 46th Ave. South, Minneapolis, entered a plea of guilty in the District Court of Hennepin County, to an information charging her with the crime of practicing massage without a license. The defendant was sentenced by the Hon. Frank E. Reed, Judge of the District Court, to a term of one year in the Hennepin County Jail. The sentence was stayed for one year on condition that the defendant close her office at Suite 407 Medical Block, 608 Nicollet Ave., Minneapolis, dispose of her equipment and absolutely refrain from the practice of healing or massage, in any manner, in the future. This the defendant agreed to do.

Mrs. Johnson was arrested on July 3, 1945, following an investigation by Minneapolis police officers and a representative of the Minnesota State Board of Medical Examiners. It was discovered that Mrs. Johnson had opened an office in the Medical Block in April, 1945, and that she had in her possession a certificate dated June 24, 1940, which she had obtained from the Minnesota Clinical Institute, Minneapolis. The certificate was signed by John LeMay, president, and C. W. Wall, M.D. Dr. Wall died in January, 1944, and LeMay is under arrest at the present time charged with practicing healing without a basic science certificate. Mrs. Johnson was operating a massage and bath parlor under the name of Fredjohn Health Center, charging \$3.00 for her treatments. Part of Mrs. Johnson's equipment was purchased from a Mrs. Gertrude Smith who was arrested at the same address in August, 1944, for operating a massage parlor without a license.

#### **PHYSICIANS LICENSED MAY 19, 1945**

##### *April Examination*

- ANDERSON, JAMES ROBERT, Northwestern, M.B. 1943, M.D. 1944, Mayo Clinic, Rochester, Minn.
- ASHLEY, WILLIAM FRANCIS, U. of Ill., M.D. 1943, Mayo Clinic, Rochester, Minn.
- ASHMAN, HUBERT CHIDESTER, La. State U., M.D. 1943, Mayo Clinic, Rochester, Minn.
- BEARZY, HERMAN J., U. of Pittsburgh, M.D. 1943, Mayo Clinic, Rochester, Minn.
- BRADLEY, WILLIAM FRANCIS, Ohio State U., M.D. 1943, Mayo Clinic, Rochester, Minn.
- CLARK, FRANK HARRISON, U. of Ore., M.D. 1943, Mayo Clinic, Rochester, Minn.
- CROWLEY, JAMES HARVEY, U. of Minn., M.B. 1944, Mayo Clinic, Rochester, Minn.
- DAVIS, RICHARD MERRILL, Indiana U., M.D. 1944, Mayo Clinic, Rochester, Minn.
- DE VOE, ROBERT WESLEY, Creighton U., M.D., 1943, Mayo Clinic, Rochester, Minn.
- DISTLER, EDWARD KARL, Col. of Med. Evang., M.D. 1944, 648 Hollywood Ave. W., Detroit, Mich.
- DOHERTY, ELMER MICHAEL, Marquette U., M.D. 1944, Elko, Minn.
- ECKSTEIN, ARTHUR WILLIAM, Northwestern U., M.D. 1912, 814 Nicollet Ave., Mankato, Minn.
- FERAYORNI, RICHARD RUDOLPH, Long Island School of Med., M.D. 1943, Mayo Clinic, Rochester, Minn.
- FERRIS, HAROLD AARON, JR., Tulane U., M.D. 1944, Mayo Clinic, Rochester, Minn.
- GOLTZ, ROBERT WILLIAM, U. of Minn., M.B. 1944, 2259 Summit Ave., St. Paul 5, Minn.
- HANSBRO, GERALD L., Northwestern U., M.B. 1943; M.D. 1944, Mayo Clinic, Rochester, Minn.
- HIGGINS, ROBERT SOURS, St. Louis U., M.D. 1943, Mayo Clinic, Rochester, Minn.
- JENNINGS, DAVID THORINGTON, U. of Pa., M.D. 1943, Mayo Clinic, Rochester, Minn.
- JOHANN, ORLANDO PETER, Marquette U., M.D. 1944, 544 S. 7th Ave., West Bend, Wis.
- KARSTENS, ANDRES, U. of Ore., M.D. 1943, Ancker Hospital, St. Paul, Minn.
- KARSTENS, HANS CARSTEN, U. of Ore., M.D. 1943, Mayo Clinic, Rochester, Minn.
- KIRBY, JOSEPH LONNIE, JR., Emory U., M.D. 1943, Mayo Clinic, Rochester, Minn.
- KOZAREK, CLARENCE EDWARD, U. of Minn., M.B. 1944, 25 E. Fifth St., Duluth, Minn.
- LUDDEN, THEODORE EDWARD, U. of Ore., M.D. 1943, Mayo Clinic, Rochester, Minn.
- MAYFIELD, LEROY HENNING, U. of Tenn., M.D. 1939, Mayo Clinic, Rochester, Minn.
- MEZEN, JAMES F., U. of Buffalo, M.D., 1944, Ancker Hospital, St. Paul, Minn.
- PALMER, JAMES KEITH, Med. Col. of S. Car., M.D. 1943, Mayo Clinic, Rochester, Minn.
- ROVELSTAD, RANDOLPH ANDREW, Northwestern U., M.B. 1944; M.D. 1944; Mayo Clinic, Rochester, Minn.
- SHELDON, KEITH WALKER, U. of Neb., M.D. 1943, Mayo Clinic, Rochester, Minn.
- SHERIDAN, VIOLA ELLEN, Creighton U., M.D. 1943, Mayo Clinic, Rochester, Minn.
- SKILLERN, PENN-GASKELL, U. of Ind., M.D. 1944, Mayo Clinic, Rochester, Minn.
- SMITH, DONALD EUGENE, Wash. U., Mo., M.D. 1943, Mayo Clinic, Rochester, Minn.
- SPEAR, RICHARD CONRAD, Ohio State U., M.D. 1943, Mayo Clinic, Rochester, Minn.
- SPURBECK, GEORGE HEADLEY, Marquette U., M.D. 1944, Proulx Bldg., Cloquet, Minn.
- STARKE, WILLIAM OSCAR, Ind. U., M.D. 1944, Mayo Clinic, Rochester, Minn.

## IN MEMORIAM

TOMLIN, HUGH MALCOLM, La. U., M.D. 1943, Mayo Clinic, Rochester, Minn.

TROXELL, MILLARD ANDREW, U. of Iowa, M.D. 1944, Hawarden, Ia.

WALLACE, ROBERT BRUCE, JR., Tulane U., M.D. 1943, Mayo Clinic, Rochester, Minn.

WELLS, JOHN JOSEPH, Creighton U., M.D. 1943, Mayo Clinic, Rochester, Minn.

WIECZOROWSKI, ELSIE IRENE, Northwestern U., M.B. 1944; M.D. 1945, Mayo Clinic, Rochester, Minn.

### By Reciprocity

BANE, HELEN WHITTEMORE, U. of Minn., M.D. 1937, 303 N. 5th St., Brainerd, Minn.

BRODERS, ALBERT COMPTON, JR., Med. Col. of Va., M.D. 1943, Mayo Clinic, Rochester, Minn.

CHAPMAN, JESSE PUGH, JR., U. of Pa., M.D. 1943, Mayo Clinic, Rochester, Minn.

CONROY, MARTIN PATRICK, U. of Ark., M.D. 1943, Foley, Minn.

COUGHLIN, WILLIAM JOSEPH, U. of Toronto, M.D. 1934, Mayo Clinic, Rochester, Minn.

DEFORST, RALPH EDWIN, Wayne U., M.D. 1943, Mayo Clinic, Rochester, Minn.

ELLIOTT, ROBERT BURL, U. of Iowa, M.D. 1943, University Hospital, Minneapolis 14, Minn.

FORSYTH, H. FRANCIS, U. of Mich., M.D. 1940, 401 Med. Arts Bldg., Minneapolis 2, Minn.

GOGELA, LOUIS JAMES, U. of Neb., M.D. 1943, Mayo Clinic, Rochester, Minn.

JENSEN, GARVER LLEWELLYN, Stanford U., M.D. 1944, Mayo Clinic, Rochester, Minn.

LATTERELL, KENNETH EDWARD, Wayne U., M.B. 1941; M.D. 1943, Mayo Clinic, Rochester, Minn.

LOOSE, WILLIAM DAVID, U. of Pa., M.D. 1942, Mayo Clinic, Rochester, Minn.

OTTEN, ALEX JOHN, Northwestern U., M.B. 1936; M.D. 1937, 404-5 First Nat. Bk., Grand Forks, N. D.

SICHER, WILLIAM DAVID, Rush Med. Co., M.D. 1940, Mayo Clinic, Rochester, Minn.

SIMMONS, DONALD RAY, Wayne U., M.D. 1943, 2024 Commonwealth Ave., St. Paul, Minn.

STRONG, MUNRO LAWRENCE, Creighton U., M.D. 1935, Mayo Clinic, Rochester, Minn.

### National Board Credentials

BLANK, SAMUEL, Med. Col. of Va., M.D. 1941, University Hospital, Minneapolis 14, Minn.

KNOLL, WILLIAM VALENTINE, Col. of Med., Evang., M.D., 1935, St. Mary's Hospital, Duluth, Minn.

LOMBARDI, ALFONSO A., U. of Buffalo, M.D. 1943, Mayo Clinic, Rochester, Minn.

MACY, JR., DOROTHY, Woman's Med. Col. of Pa., M.D. 1944, Mayo Clinic, Rochester, Minn.

MORRIS, BENJAMIN HENRY, Cornell U., M.D. 1943, 1009 Nicollet Ave., Minneapolis 2, Minn.

OLSEN, GERTRUDE EMILY, Col. of Med. Evang., M.D. 1937, Georgetown, Minn.

REMINGTON, JOHN HOWARD, U. of Buffalo, M.D. 1939, Mayo Clinic, Rochester, Minn.

VON LEDEN, HANS VICTOR, Loyola U., M.D., 1942, Mayo Clinic, Rochester, Minn.

# In Memoriam

### GILBERT LESLIE GOSSLEE

On Sunday morning, July 15, 1945, one of our honored and respected members, Dr. Gilbert Leslie Gosslee of Moorhead," passed on.

"Gil", as he was lovingly called, practiced medicine in Moorhead 32 years. He was born in Hazleton, Minnesota, in 1877; attended the public schools in Tracy before enrolling as a student in the Hamline University Medical School. He later studied in Vienna.

Dr. Gosslee was a Mason, a Kiwanian and a Fellow of the American College of Surgeons. In World War I he was a member of the U. S. Medical Corps with the rank of Captain.

For ten years he was resident Director of the State Teachers College at Moorhead and at the time of his death was the eighth Councilor District representative on the State Procurement and Assignment Board.

His son John is a Captain in the U. S. Army Medical Corps and stationed in Italy; Lt. David is in North Africa; Private 1st Class Mildred at Kelly Field, Texas.

"Gil," true to the Scotch tradition, was unostentatious, unspeakably sincere, self-respecting. He was the soul of honor—tolerant and professionally ethical—above any whisper of suspicion concerning his moral and personal integrity.

His family life was singularly happy—consistent with his high idealism and profound moral consciousness.

All in all, he was a public-spirited patriotic citizen and personified the high ideals of an honorable guild.

O. J. HAGEN, M.D.

### VITAL STATISTICS RECORDS NEED CLARIFICATION

Since the 1945 Legislature and Chapter 393 of the Session Laws has provided that the official time of the State shall be Central Standard Time and forbids any Department of the State to employ any other time or adopt any other providing for another time, it follows that the time stated on birth and death certificates should be Central Standard Time.

But because it might be possible that regardless of this law the time recorded in such certificates will be based upon Central War Time, it is especially necessary that in all cases the word Central "Standard" Time or Central "War" Time, as the case may be, should be added to the Birth or Death certificates. These added words should be written out *in full*.

# Minnesota Academy of Medicine

Meeting of May 9, 1945

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, May 9, 1945. Dinner was served at 7 o'clock and the meeting was called to order by the President, Dr. A. G. Schulze, at 8:10 o'clock.

There were fifty-five members and two guests present. Minutes of the April meeting were read and approved. The scientific program followed.

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## THE VALUE OF THE STERNAL PORTION OF THE BONE MARROW IN DIAGNOSIS

EMIL MARO SCHLEICHER† and GEORGE FAHR, M.D.

Minneapolis, Minnesota

The sternal portion of the bone marrow organ is a reticulo-endothelial structure containing fat, hemopoietic islands and a rich supply of blood vessels, among which the sinuses are very important. In these sinuses the blood flows slowly and intermittently in consequence of which particulate matter can sediment out readily. The reticulum furnishes a rich source of macrophages which engulf sedimented matter. One would say a priori that this organ would be a rich field for metastases and for the phagocytosis of small parasites circulating in the blood, and one would also expect this primitive reticulum from time to time to give rise to malignant lesions.

This evening I am going to show a few cases which illustrate the value of bone marrow studies in diagnosis. We have selected nine cases from a large material studied at the Minneapolis General Hospital for the past four years. My purpose this evening is to introduce to you some of the types of diagnoses that can be made by this method and to stimulate your interest in it so that you may from time to time make use of our facilities in helping you in your diagnoses and at the same time helping us in the evaluation of the method. This method presupposes the co-operation of a cytologist or pathologist competent in the field of bone marrow diagnosis. In the paper this evening, I wish to say that I (G. F.) am to be considered only the promotor of the work. The technical skill and the cytological understanding which have made this work possible are to be credited to the other author (E. M. S.).

### Case Reports

*Case 1.—Multiple Myeloma.* This seventy-six-year-old man was admitted on January 23, 1945, and died on January 31, 1945. He came in with a presenting com-

plaint of pain in the epigastrium radiating to the left flank, loss of weight, incontinence of urine and feces, and weakness. Physical examination was negative excepting for a marked tenderness to palpation in the left epigastric region extending along the left costal margin and to the left flank.

Laboratory examination showed an anemic state: hemoglobin of 66 per cent red count 3,200,000, and leukocyte count 3,900. The technician noted rouleau formation in the blood smears. The serum albumin was 4.6 and the globulin 3.9 grams per cent. The x-ray examination of lungs, long bones and skull was said to be negative. A bone marrow aspiration was done. Sections of marrow units showed the normal bone marrow replaced by so-called "plasma cells" (myeloma cells). These pathologic cells have an eccentrically placed nucleus with irregularly condensed chromatin and various sized nucleoli. The cytoplasm is abundant, of a sky-blue color with Wright's stain and is somewhat mottled in appearance (Fig. 1). Bence-Jones protein is not found in the urine at this developmental stage of the neoplasm. This next photomicrograph in color shows the reddish rhomboid and pencil-like crystals of globulin in the sky-blue cytoplasm (Fig. 2). This is from another one of our cases of multiple myeloma in which Bence-Jones protein was found in the urine. When these crystals are found in the myeloma cells, the urine very frequently shows Bence-Jones protein. The x-ray of the left scapula shows three small round areas of rarefaction diagnosed as probable myeloma rarefactions after the diagnosis by bone marrow study had been made. Autopsy showed these to be myelomic tumors in the scapula. The marrow in the long and flat bones consisted chiefly of myeloma tumor tissue.

*Case 2.—Reticulo-endothelioma. Mycosis Fungoides.* This fifty-one-year-old woman came into the Minneapolis Hospital on May 17, 1943, because for the past three weeks she had noticed progressively increasing weakness, night sweats, dyspnea on the slightest exertion, and a yellow tint to her skin. In addition she noticed swelling of the face and ankles. There was nausea and anorexia. Previous history is of no significance.

Physical examination revealed an anemic well-nourished female, with a slightly yellow tint to her skin. Liver enlarged to 3 cm. below the right costal margin in the right medio-clavicular line. Liver edge seemed a little rounded but no nodules were felt on the surface of the liver.

The patient ran an intermittent fever rising to 100-101 every day. X-rays of the gastro-intestinal tract and chest were negative. Hemoglobin was 24 per cent, red count was 1,100,000 and leukocyte count 2,250. The blood smear showed 8 per cent of undifferentiated reticulum cells. A bone marrow aspiration was done the same day. The gross marrow units were slightly larger than the normal. Imprint preparations showed many late pronormoblasts, with the basophilic normoblasts predominating. Mitosis was prominent. The majority of the erythrocytes were macrocytic. A severe hypoplasia of myeloid tissue was noted. An occasional myeloblast, some promyelocytes, and a few neutrophilic myelocytes and a few segmented neutrophiles were observed. A few megakaryocytes were seen. A preponderance of undifferentiated reticulum cells ranging in size from 6 to 15 microns was a dominant feature of the smear preparations. There were small reticulum syncytia com-

From the Department of Medicine, University of Minnesota and the Minneapolis General Hospital.

†Parke, Davis Fellow in Clinical Hematology.

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posed of from three to seven cells. The nucleus of the large reticulum cells showed a tendency toward lobulation and some had two to three nuclei. There was no tendency of these rounded up reticulum cells to differentiate toward any particular type of marrow cells. Mitosis among

One mitotic figure in the late telophase stage was seen. There were about 65 to 70 per cent lymphocytes and about 34 to 26 per cent neutrophiles seen in the smear. One of the nodules was biopsied and the pathologist's report was "section is covered by a thin layer of strati-

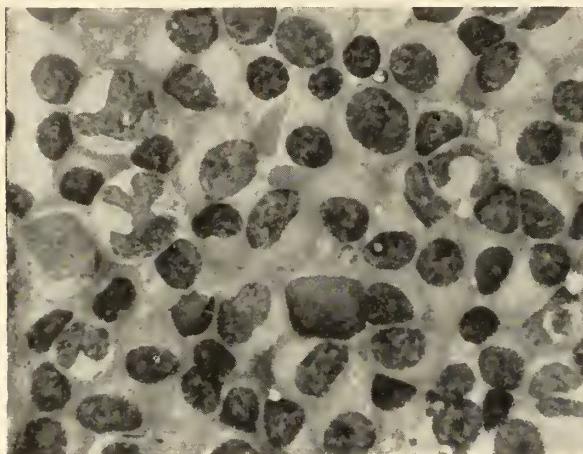


Fig. 1. Bone marrow imprint showing syncytium of myeloma cells (plasma cells) in various stages of development.

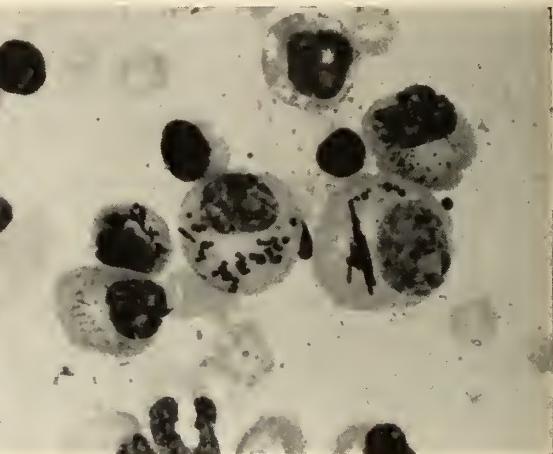


Fig. 2. The large black dots and rod-like inclusions in the cytoplasm of these myeloma cells are the globulin crystals.

these cells was frequent. The impression is gained that the cells are derived from a well advanced undifferentiated malignant lymphoblastoma (reticulo-endothelioma) of the bone marrow organ. Because this type of lesion is seemingly rare, we suggested that this patient should be followed closely in order to establish, if possible, the character of the terminal stage of this lesion. Impression: "Advanced undifferentiated malignant lymphoblastoma or reticulo-endothelioma of the bone marrow organ."

Final diagnosis: Reticulo-endothelioma of the bone marrow organ.

We were satisfied that this was a reticulo-endothelioma or possibly leukemic state of the reticulo-endothelial system. The patient seemed to improve on small transfusions and daily liver injections of 1 c.c. intramuscularly, and on June 21 she was discharged with a hemoglobin of 80 per cent, R.B.C. 3,900,000, W.B.C. 3,000.

About five weeks after she left the Minneapolis General Hospital she returned to the out-patient department with chills and fever, and a reddened, mildly edematous infiltration around the right eye. She was again admitted to the hospital on September 24 at which time a mass was noticed anterior to the left ear in the region of the parotid gland about 3 cm. in diameter. From this time on, she developed nodules which came and went on her face and body. These nodules would sometimes itch. At times they looked like urticaria nodules; at other times they were said to resemble the nodules of mycosis fungoïdes. She was sent to the dermatological clinic where some of the dermatologists thought this was mycosis fungoïdes. She finally came into the hospital on January 22 because she had noticed many hard nodules over her face and scalp and the chest, back and abdomen. These were not sore. The nodules varied from 0.5 cm. to 1.5 cm. in diameter and there were at times as many as thirty of these nodules scattered over her body. They were most numerous over the scalp, face, and neck. One was noted to develop over night.

At this admission her hemoglobin was 42 per cent, the red count was 1,500,000, and the leukocytes were 1,900. The blood smear showed an occasional cell showing the characteristics of reticulo-endothelial cells.

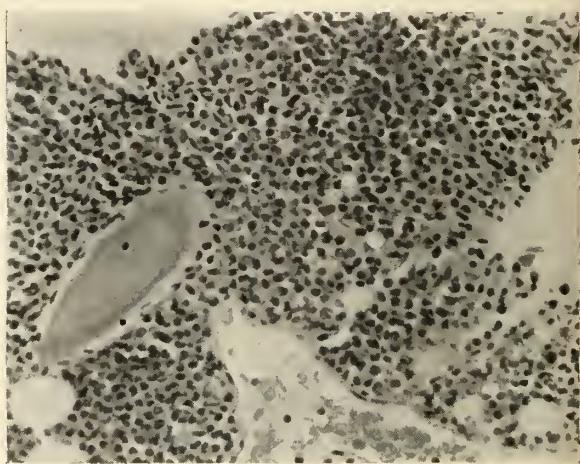


Fig. 3. Section of a marrow unit showing on the left a trabeculum and in the lower part of the figure a sinus with a few of the malignant cells in the sinus. The normal structure of the bone marrow unit is almost completely replaced by the malignant reticulo-endothelial cells.

fied squamous epithelium. Beneath this the entire tissue is replaced by elongated vesicular cells which in some areas are dark-staining. There is some fibrosis." Diagnosis: "Malignant Lymphoblastoma." The diagnosis of the medical department was reticulum cell sarcoma (reticulo-endothelioma). This slide shows the numerous skin nodules. The second slide is a section of a sternal marrow unit showing the normal bone marrow replaced by a syncytium of cells with round, oval or indented nuclei with prominent nucleoli and narrow clear cytoplasm. The cells arise directly from the reticulum. There is a bone trabeculum and a large sinus in which a few of these malignant cells can be seen. On this day we found mitotic figures in immature reticulo-endothelial cells in the peripheral circulation (Fig. 3). The third slide shows an imprint of a marrow unit. The cells are

stained with Wright's stain. The nuclei are deeply stained; the nucleoli are conspicuous. The bluish cytoplasm is narrow and mottled in appearance.

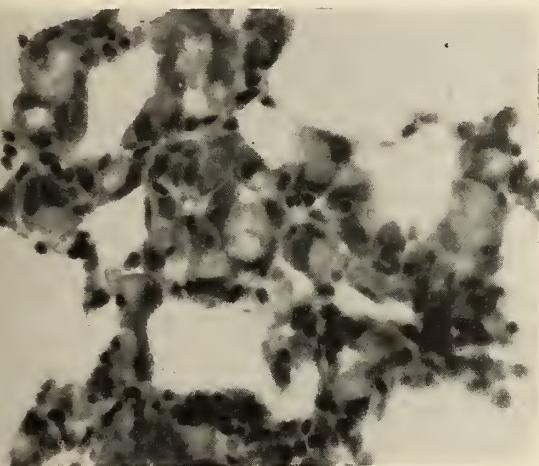


Fig. 4. Section of bone marrow unit showing a syncytium of secreting adenocarcinoma cells (signet ring cells).

**Case 3.—Adeno-carcinoma of Stomach.** This sixty-nine-year-old woman was known to have had pernicious anemia for at least eight years, during which time she was followed in the Minneapolis General Hospital pernicious anemia clinic. For many months this patient has had a gradual reduction in her hemoglobin and red cell count, despite *lege artis* treatment and she came in because she felt weak and tired. Examination of the bone marrow showed the following: The megaloblastic pattern characteristic of pernicious anemia is difficult to make out. Cells which look like signet ring cells filled with mucin form a syncytium. These cells are characteristic of metastases to the bone marrow from carcinoma of the gastro-intestinal tract (Fig. 4). The patient developed a large mass in the epigastrum and x-ray evidence of carcinoma of the stomach. She refused operation. It is easily seen why it is almost impossible to produce remissions in pernicious anemia when the bone marrow is invaded by carcinoma metastases.

**Case 4.—Pernicious anemia complicated by Miliary Tuberculosis of Bone Marrow.** This sixty-year-old woman came into the hospital in a semi-comatose condition with symptoms of heart failure and the physical findings of a pneumonia in the left lower lobe. Hemoglobin was 18 per cent, red cell count 425,000, leukocytes 4,000, neutrophiles 56 per cent, lymphocytes 44 per cent. There was 0.2 per cent reticulocytes. Thrombocytes were 98,000 per cubic millimeter. The mean corpuscular diameter was 9.6 microns. There was an icterus index of 20 and an indirect VandenBergh of 2.4 mgm. and a total bilirubin of 3.9. A probable diagnosis of pernicious anemia was made. A sternal aspiration was done for confirmation of the clinical diagnosis.

The gross marrow units were larger than normal. Imprints of marrow units showed promegaloblastosis which is the safest diagnostic criteria of pernicious anemia. Histological preparation of marrow units showed a small epitheloid tubercle located near a sinus in one marrow unit. Because of poor response to adequate anti-anemia therapy another sternal aspiration was performed. Histological preparations showed tubercles in 8 marrow units out of 100. Seven of these were hard tubercles as shown on the screen. One sees three Lang-

hans giant cells imbedded in epitheloid cells. A conspicuous ring of lymphocytes is present. This is a hard tubercle without caseation. The next photomicrograph

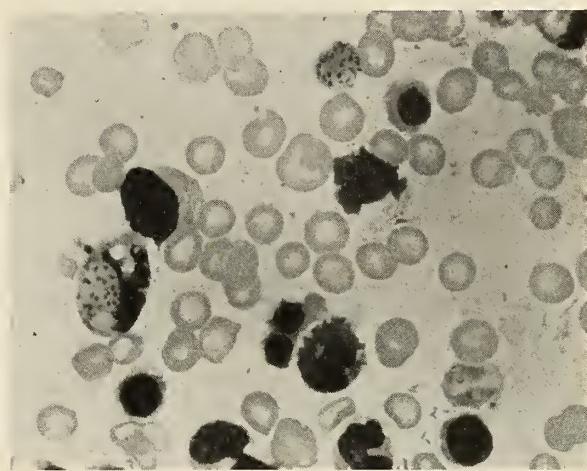


Fig. 5. Near the center and upper end of this figure, one can see the mature stage of a schizont within a red blood cell. There are approximately eighteen nuclei seen in this parasite. To the left and a little below center, one sees a large macrophage which has engulfed three red cells with the plasmodia in the mature schizont stage. In the lower right corner is an early trophozoite in a red blood cell.

shows a soft tubercle from the same bone marrow. There is one Langhans giant cell. The casedated area in the center is surrounded by lymphocytes. Tubercle bacilli were demonstrated in the casedated material of this tubercle. Chest x-ray showed a healed Ghone tubercle but no evidence of an active tuberculous process. Gastric washings yielded acid-fast bacilli. The patient was discharged with diagnosis of pernicious anemia and miliary tuberculosis of the bone marrow organ. Her chest x-rays five months after discharge were reported showing no tuberculous process. Peripheral blood was found to be still below normal levels in spite of adequate anti-anemia therapy. The patient is still alive and showing no symptoms of tuberculosis.

**Case 5.—Carcinoma of the Lung.** This seventy-one-year-old patient came into the hospital because of pain in the left shoulder and hips, weakness and tiredness. Physical examination was negative excepting for an anemic appearance and a tendency to shortness of breath.

The hemoglobin was 30 per cent, the red count was 1,500,000, and the leukocytes were 14,700, with 84 per cent neutrophiles. Smear was of no importance in diagnosis. X-ray of the chest showed a density in the right lung field. An atypical pneumonia process was considered. No areas of metastases could be demonstrated. The left diaphragm was slightly elevated. X-ray conclusions: Questionable pneumonia, right lung.

This section of a bone marrow unit shows a syncytium of carcinoma cells, resembling squamous cells, apparently extending through the wall of a primitive blood vessel.

Bone marrow diagnosis was metastatic carcinoma.

Clinical diagnosis was unexplained anemia, malignancy possibly in lung. Temperatures ran from 101 to 104. The patient died after five days in the hospital. A postmortem examination in the department of anatomy later on showed bronchogenic carcinoma of the right lung.

**Case 6.—Malaria Treatment with No Response.** This sixty-one-year-old patient was sent into the hospital for malaria treatment of general paresis. He was given

## MINNESOTA ACADEMY OF MEDICINE

10 c.c. of a citrated blood from a patient under malaria treatment at the University of Minnesota on the afternoon of July 26, 1943. No chills were obtained and on August 9 malarial blood 20 c.c. was given without the usual response with chills and fever.

Examination of the bone marrow revealed active phagocytosis of plasmodia in the fresh specimen. This photomicrograph of an imprinted marrow unit shows one red cell with plasmodium vivax in the morula stage and one reticuloendothelial cell which has engulfed three red cells with plasmodium vivax in the morula stage (Fig. 5). This active phagocytosis seen in the bone marrow suggests the hypothesis that this may be responsible for the lack of response in this case.

*Case 7—Gaucher's Disease.* This seventy-nine-year-old man came into the hospital on February 26, 1942, with a history of generalized weakness, headache, anorexia and cough, poor appetite, shortness of breath. He had lost ten pounds in the week previous to admission and his skin had become very pale with some slight yellow tint. Examination revealed 1+ edema of the ankles, some tenderness in the right upper quadrant and palpable liver. X-ray showed cardiac enlargement, some pulmonary congestion and pleural fluid on the right side. Patient was put on a cardiac régime.

Hemoglobin was 33 per cent, R.B.C. 2,000,000; leukocytes 9,500; nothing noteworthy in the differential. The icterus index was 14 and the Van den Bergh was direct immediate 1 mg. per cent and direct delayed 4 mg. per cent. Sternal marrow was aspirated, as is usual in this hospital when we have an unexplained anemic state. There was a marked hyperplasia of the myeloid elements and numerous eosinophiles were present. Myeloid cells showed various degrees of degenerative changes. The lymphocytes were reduced in number. There were many plasma cells. There were a small number of histiocytic mesenchymal cells. A conspicuous number of foam cells were present. These elements showed the characteristic morphology of Gaucher's cells. A diagnosis of lipid histiocytosis, "Gaucher's disease" of the bone marrow, was made. A tentative diagnosis of Gaucher's disease having been made, x-rays of the femurs were obtained and these were submitted to Dr. Leo Rigler of the University of Minnesota who said it was his opinion that there might be some rarefaction in the intercondylar portion of the femurs but he didn't think there was any definite evidence or any other evidence of pathologic rarefaction in the bones.

The patient died on March 4 and an autopsy was performed. Microscopic examination showed "Gaucher-like" cells present in small groups in a lymph node. Spleen weighed 100 grams and showed occasionally Gaucher-like cells. Liver weighed 1140 grams and showed no specific pathology. Marrow from long and flat bones was obtained. Gaucher-like cells were scattered throughout. The marrow of the flat bones was practically replaced by Gaucher's cells. Pathological diagnosis was: Gaucher's disease; bronchopneumonia; benign hypertrophy of prostate; hydrocele, left; coronary sclerosis; myocardial fibrosis; pleural effusion, bilateral; focal necrosis of liver; emphysema of lungs.

*Case 8.—Hypernephroma.* A man, aged fifty-three, was admitted on January 31, 1944, with a complaint of pain in the left lower quadrant, burning on urination, chills, fever, nausea and vomiting, and cough. This man had a hypernephroma removed in 1938. The x-ray showed "a density extending out from the left root superimposed upon the pulmonic vessels which had the appearance of a rounded mass and also an homogenous density extending out from the right root into the parenchyma of both lungs. There is an interlobar pleurisy between the middle and the upper lobe." X-ray stated the exact nature of the density could not be determined from that examination. "Pleural thickening might be

responsible for part of this change but pneumonic process must also be considered. Would like lipiodal study of the right lung, also fluoroscopy to determine the nature of the mass at the left root and also a right lateral. Could be metatases." After a bronchogram was made with lipiodal, it was stated that no conclusions could be reached. There was a slight anemia present. Nothing else of note in the laboratory work-up. The patient ran a fever around 101 for four days; then the temperature became normal.

This photomicrograph is of an imprint of a bone marrow unit showing a syncytium of seven cells with hydropic cytoplasm, darkly staining nuclei of uniform size and sky blue staining cytoplasm. The cells show the morphology characteristic of hypernephroma cells.

*Case 9.—Refractory Pernicious Anemia.* Fatty metamorphosis of liver and bone marrow organ. Choline chloride therapy brought anemic state into remission. This is the case of a patient with pernicious anemia who responded characteristically for years to liver extract. He then developed a sensitivity to liver extract and could not be desensitized. He developed a jaundice with enlarged liver several days after an injection of purified liver extract. There was nausea, vomiting and itching, dark brown urine, light colored stools, enlarged liver and icterus. Needle biopsy of the liver showed fatty metamorphosis as seen in this photomicrograph. This section of a sternal marrow unit shows many large fat cells and general hypoplasia of the active marrow. Promegaloblasts characteristic of pernicious anemia in relapse are present. There was a progressive deterioration of the blood status. Then 20 c.c. of a 5 per cent choline chloride solution was given intravenously for sixteen days. At this time the liver resumed a nearly normal morphology as seen in this photomicrograph. The next photomicrograph shows a section of a sternal marrow unit after treatment with choline, you can see that the promegaloblasts have disappeared, many normoblasts are present, the fat cells have become less in number, the general pattern is that of a hyperplastic unit indicating a remission of the pernicious anemia without supporting liver extract therapy. This slide shows a graph of the peripheral blood status before, during and after choline chloride therapy. Note that the peripheral blood levels were normal when the patient was discharged from the hospital. A detailed report of this case is in press.

These nine cases which are selected from a very large series will serve to call attention to the value of bone marrow studies in diagnosis. We hope they will serve to stimulate many other investigators to study this organ as a source of information in diagnostic problems, to the end that we may soon have an evaluation of its importance.

### Discussion

DR. E. T. BELL, University of Minnesota: In regard to pernicious anemia, we have learned over the years that a patient with pernicious anemia is very prone to develop carcinoma of the stomach. It is only during the last few years that we have learned how often this occurs. The procedure that is being adopted now in a number of our clinics is to bring the patient in every six months for x-rays of the stomach. I think this is a good idea because you may then get the cancer in an early stage. Carcinoma develops even when the patient is under successful management. The primary trouble in pernicious anemia is an atrophy of the mucosa of the stomach. This atrophic stomach is more likely to develop carcinoma than a normal stomach. The only way to find carcinoma in an operable stage is to examine the stomach every six months or so by x-ray.

I want to show a few microscopic slides to illustrate some of the diseases that can be recognized in the sternal bone marrow:

1. Normal bone marrow from the sternum.
2. Carcinoma metastasis in the marrow.
3. Bone marrow biopsy from a case of multiple myeloma showing plasma cells.
4. Patient with severe anemia. Biopsy of marrow showing normoblastic regeneration; this excludes pernicious anemia.
5. Typical pernicious anemia in an exacerbation; most of the marrow is replaced by megaloblasts.
6. Acute leukemia; marrow replaced by young cells; you know from that it is leukemia.
7. Chronic lymphatic leukemia.

Examination of the sternal marrow is a most useful diagnostic procedure. Of course it won't settle all your problems but it will settle some of them. Just recently miliary tuberculosis was found by studying the marrow.

**DR. FAHR:** This miliary tuberculosis case has gone three months now and the patient has not developed any tubercles in the lung. We don't know what is going to happen there. You will see some very interesting things about miliary tuberculosis in Schleicher's work.

**DR. S. E. SWEITZER, Minneapolis:** The case of reticuloendotheliosis was shown at the Minnesota Dermatological Society. One of the most interesting things about this case was that the lesions developed so rapidly; she had tumors that you could see grow from day to day. The destruction of the malaria parasites in the bone marrow was of interest. I wonder if this could explain the difficulty in inoculating the colored people with malaria. This should be looked into.

**DR. H. E. MICHELSON, Minneapolis:** The group of diseases that are included under the term lymphoblastoma interests us very much because we as dermatologists often see skin lesions which at first are not distinguishable, one from the other. However, I do not believe that the etiology of the lymphoblastomas is a single one, nor that the variations are mutations. I believe that mycosis fungoides, leukemia, etc., however, are single diseases, but we are unable to differentially diagnose them at their inception. Unfortunately, we use the word atypical, which merely means we are not certain. I think that the bone marrow studies of Dr. Fahr are very valuable, and this form of examination may throw considerable light on many obscure studies. I would like to ask Dr. Bell how he knows there is metastasis?

**DR. BELL:** A metastasis is merely a tumor not connected with the primary lesion. If you have a case of carcinoma of the prostate and there is a growth anywhere else, that is a metastasis from the original growth.

**DR. MICHELSON:** How do you know it comes from that?

**DR. BELL:** We believe that nearly all carcinomas originate in a single focus. I don't think we would entertain the idea that cells in the marrow would change into carcinoma. In regard to these malignant lymphoblastomas that Dr. Michelson referred to, this diagnosis is justified when we cannot determine the type of lymphoblastoma. I am willing to take the dermatologist's diagnosis of mycosis fungoides. I think that is a good name for a lymphoblastoma with the major involvement in the skin. The histology of mycosis is sometimes like reticulo-sarcoma; it is never like leukemia. On biopsy of the skin it is seldom possible to say which one of these malignant diseases it is; practically it doesn't make so very much difference as they all amount to about the same thing. In a biopsy

of Hodgkin's disease you nearly always get the diagnosis from a lymph node but not from the skin. We haven't had much luck with bone marrow in Hodgkin's. If we had a real biopsy of bone marrow and not an aspiration, we could probably then make the diagnosis more often. A very large number of malignant tumors metastasize to the bone marrow. In regard to malaria, I am wondering if sternal biopsy may not be useful in the diagnosis of latent malaria in returning soldiers.

**DR. E. M. HAMMES, Saint Paul:** I would like to ask Dr. Fahr if he can advise us regarding patients suffering from general paresis who have been inoculated with malaria and do not develop a malarial reaction. When these patients are given triple typhoid vaccine intravenously, which will produce a definite temperature reaction, they occasionally begin to have a typical malaria reaction. I would also like to know why patients suffering from general paresis given malaria taken from another patient respond so quickly to small doses of quinine and the malaria apparently is cured.

**DR. FAHR:** The first question I am not going to say anything about. As to the second question, you know we do not inoculate sporozoites when we inoculate with a patient's blood into another patient but we inoculate with the schizont stages or trophozoites. These stages of the malaria parasite are very susceptible to quinine, whereas the sporozoites and any stage between the sporozoite and trophozoite is not susceptible to any high degree. The sporozoites may lie dormant in reticuloendothelial or other tissues for a long time. Until they all die out, relapses are possible. Whereas if only the trophozoites are present they are killed by quinine and no relapses are possible.

These are only guesses but it helps me explain some things about the difference in mosquito transmitted malaria and malaria transmitted by human blood.

**DR. BELL:** I have examined these cases of inoculated malaria and found the same stages of the parasite as are found in malaria transmitted by mosquitos. I do not know why the inoculated malaria has less tendency to relapse.

**DR. BEN SOMMERS, Saint Paul (by invitation):** Sternal biopsy helps in the management of another disease not mentioned tonight, i.e., thrombocytopenic purpura. If study of the marrow reveals a large number of megakaryocytes, splenectomy will usually be indicated. If these cells are greatly diminished in number, splenectomy is contraindicated.

Occasionally sternal biopsy will fail to yield bone marrow even on repeated aspiration in more than one location. Two conditions may be responsible for this failure, marked atrophy of the marrow as seen in cases formerly labeled aplastic anemia, and in destruction of the normal marrow and replacement by certain forms of metastatic carcinoma.

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The meeting adjourned.

J. A. LEPAK, M.D., *Secretary*

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To whatever school of social philosophy one belongs, the fact remains that it is the private physician who sees the largest number of persons in need of medical counsel. The physician knows by training and experience that the early manifestations of pulmonary tuberculosis are protean. A good percentage of his patients have one or more of these symptoms. Many others deserve x-raying on general principles because of physiological states conducive to activation of tuberculosis.—WILLIAM COURTNEY DOUGLASS, M.D., NTA Bull., May, 1945.

# CONSTRUCTIVE PROGRAM FOR MEDICAL CARE

## AMERICAN MEDICAL ASSOCIATION

This platform was adopted by the Council on Medical Service and Public Relations and the Board of Trustees of the American Medical Association on June 22, 1945.

### Preamble

The physicians of the United States are interested in extending to all people in all communities the best possible medical care. The Constitution of the United States, the Bill of Rights and the "American Way of Life" are diametrically opposed to regimentation or any form of totalitarianism. According to available evidence in surveys, most of the American people are not interested in testing in the United States experiments in medical care which have already failed in regimented countries.

The physicians of the United States, through the American Medical Association, have stressed repeatedly the necessity for extending to all corners of this great country the availability of aids for diagnosis and treatment, so that dependency will be minimized and independence will be stimulated. American private enterprise has won and is winning the greatest war in the world's history. Private enterprise and initiative manifested through research may conquer cancer, arthritis and other as yet unconquered scourges of humankind. Science, as history well demonstrates, prospers best when free and unshackled.

### Program

The physicians represented by the American Medical Association propose the following constructive program for the extension of improved health and medical care to all the people:

1. Sustained production leading to better living conditions with improved housing, nutrition and sanitation which are fundamental to good health; we support progressive action toward achieving these objectives:
2. An extended program of disease prevention with the development or extension of organizations for public health service so that every part of our country will have such service, as rapidly as adequate personnel can be trained.
3. Increased hospitalization insurance on a voluntary basis.
4. The development in or extension to all localities of voluntary sickness insurance plans and provision for the extension of these plans to the needy under the principles already established by the American Medical Association.
5. The provision of hospitalization and medical care to the indigent by local authorities under voluntary hospital and sickness insurance plans.
6. A survey of each state by qualified individuals and agencies to establish the need for additional medical care.
7. Federal aid to states where definite need is demonstrated, to be administered by the proper local agencies of the states involved with the help and advice of the medical profession.
8. Extension of information on these plans to all the people with recognition that such voluntary programs need not involve increased taxation.
9. A continuous survey of all voluntary plans for hospitalization and illness to determine their adequacy in meeting needs and maintaining continuous improvement in quality of medical service.
10. Discharge of physicians from the armed services as rapidly as is consistent with the war effort in order to facilitate redistribution and relocation of physicians in areas needing physicians.
11. Increased availability of medical education to young men and women to provide a greater number of physicians for rural areas.
12. Postponement of consideration of revolutionary changes while 60,000 medical men are in the service voluntarily and while 12,000,000 men and women are in uniform to preserve the American democratic system of government.
13. Adoption of federal legislation to provide for adjustments in draft regulation which will permit students to prepare for and continue the study of medicine.
14. Study of postwar medical personnel requirements with special reference to the needs of the veterans' hospitals, the regular army, navy and United States Public Health Service.



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# SEARLE

RESEARCH IN THE SERVICE OF MEDICINE

# ♦ Of General Interest ♦

A former fellow in medicine of the Mayo Foundation, Dr. William Calvert Chaney, has been elected president of the Tennessee Medical Association for 1945-46.

\* \* \*

Dr. Arthur Sanford, Mayo Clinic, assisted with the examinations for the American Board of Pathology held in Philadelphia in June.

\* \* \*

Dr. John Aubrey Phillips, Hibbing, who received his degree from Loyola University on June 23, is interning at St. Ann's Hospital in Chicago.

\* \* \*

Drs. F. H. Dubbe and Albert Frische were returned to office, and Dr. H. T. Hammermeister was elected for a first term, on the Board of Directors for Union Hospital in New Ulm, at the recent annual election.

\* \* \*

Major L. H. Mousel, formerly of the Mayo Clinic, has been appointed Consultant in Anesthesiology to the Office of the Surgeon General of the United States Army.

\* \* \*

Dr. Charles W. Rogers, physician and surgeon at the Heron Lake hospital for the past seven years, has re-

signed to continue his study of children's diseases under a fellowship at the Minneapolis General Hospital.

\* \* \*

Lieutenant Colonel S. B. Lovelady, formerly of the Mayo Clinic, has been made a fellow of the Royal Society of Medicine of England. Lieutenant Lovelady has been stationed in the British Isles for the past year.

\* \* \*

Colonel R. B. Kirklin, Mayo Clinic, is now on active duty in Washington, D. C., where he is serving as senior consultant in radiology to the Surgeon General of the United States Army.

\* \* \*

Dr. H. A. Albrecht, who was recently appointed associate physician on the staff of the hospital at St. Croix Falls, has purchased a house at Taylors Falls and moved his family there from their former home in Floodwood.

\* \* \*

Bronze stars have been awarded to Lieutenant Colonel C. K. Maytum and Lieutenant Colonel J. T. Priestly for meritorious service in the New Guinea and the Netherlands East Indies campaigns. Both physicians were formerly associated with the Mayo Clinic.

(Continued on Page 678)

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## OF GENERAL INTEREST

### OF GENERAL INTEREST

(Continued from Page 676)

Dr. Viktor Wilson, Director of Child Hygiene at the University of Minnesota, was guest speaker at the annual meeting of the stockholders of the hospital in Kelliher. "Community Health, Medical and Hospital Services" was the subject of Dr. Wilson's address.

\* \* \*

Dr. Paul O'Leary, Mayo Clinic, attended the meeting of the Consultant Staff of the Dermatoses Investigative Committee of the United States Public Health Service held at Bethesda, Maryland. Dr. O'Leary is chairman of the committee.

\* \* \*

Dr. George A. Williamson, formerly of St. Paul and recently discharged from the army medical service, has opened an office at 910 Professional Building, Phoenix, Arizona, for the practice of diseases of the bones and joints.

\* \* \*

Dr. Charles Albert Haberle, Jr., a 1945 graduate of the University of Minnesota Medical School, has been commissioned a lieutenant and will enter the Army Medical Corps when he has completed his internship at the Minneapolis General Hospital.

\* \* \*

Announcement has been made of the appointment of Captain Howard K. Gray, former associate professor of medicine at the Mayo Foundation Graduate School of Medicine, as chief of surgery at the Naval Hospital in San Diego, California.

\* \* \*

Major A. B. C. Knudson, MC, has been transferred to Veterans Administration, Central Office, Washington, D. C. At the present time he is doing some research work at Cambridge, Massachusetts. He was recently elected to membership in the American College of Physicians.

\* \* \*

Announcement has been received of the marriage of Miss Jeanette Kraemer, a student at the University of Minnesota School of Medicine, to Dr. Paul Thorpe Lowry, of Cambridge, Massachusetts, on June 25. They will make their home in San Francisco, where Dr. Lowry, who graduated from Harvard this spring, will serve his internship at the City and County Hospital.

\* \* \*

Dr. Douglas L. Johnson, Little Falls, is this year's winner of the president's cup—a trophy presented annually to residents of Little Falls in recognition of outstanding civic activities. In making the award, the committee specifically mentioned Dr. Johnson's work as co-chairman of the Red Cross campaign, chairman of the Jaycees aviation committee, and his election to the Board of Education.

(Continued on Page 680)

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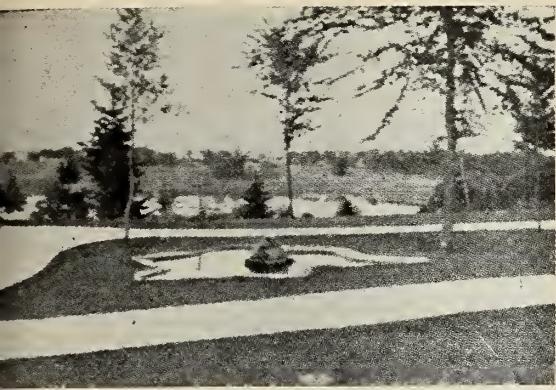
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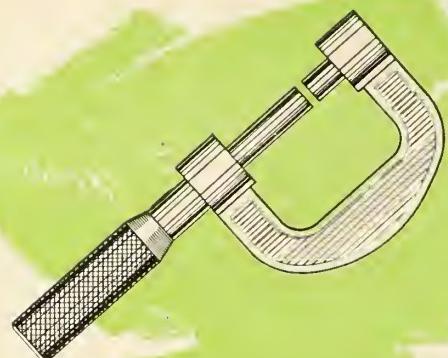
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### OF GENERAL INTEREST

(Continued from Page 678)

The Minnesota Cancer Society has announced the election of Dr. Arthur W. Wells to the vacancy of first vice president, caused by the death of Dr. Max Alberts.

Dr. Wells is head of the department of pathology at St. Luke's Hospital in Duluth and he is chairman of the cancer committee of the Minnesota State Medical Association.

\* \* \*

Lieutenant (jg) Austin M. McCarthy, now serving on the U. S. Hospital Ship "Relief," has been especially commended by his chief surgeon, Commander W. J. Sheehan, for his share in the evacuation of the more than 3,000 wounded from Okinawa.

Lt. McCarthy, whose home is in Watkins, was a member of the staff of St. Andrews Hospital in Minneapolis at the time of his induction into service about a year ago.

\* \* \*

Captain Howard K. Gray, formerly of Rochester and now serving as chief in surgery at the U. S. Naval Hospital at San Diego, has been awarded the Navy Commendation Ribbon. Captain Gray was chief of the surgical service at the Navy Hospital, Area Heights, Hawaii between August, 1944, and May, 1945, and received commendation for "devotion to duty, able leadership in co-ordinating the surgical service at the hospital, and superior skill in his profession."

\* \* \*

Dr. R. R. Hendrickson, who has been on a three years' leave of absence as surgeon in reserve in the United States Public Health Service, returned to his position as superintendent of the Sand Beach Sanatorium at Lake Park in July.

Dr. J. Nelson Ewbank, superintendent during Dr. Hendrickson's absence, has returned to his native State, Illinois, as director of the Outlook Sanatorium at Urbana and Champaign.

\* \* \*

The annual meeting of the St. Louis County and Range Medical Associations was held in Virginia at the Eshquaguma Country Club on June 14. Delegates attended from Duluth, Hibbing, Chisholm, Eveleth, Virginia, Biwabik, Aurora, and Gilbert. A golf tournament was a feature of the afternoon, and the ladies were entertained at bridge during the evening.

Dr. H. O. McPheeters, Minneapolis, was guest speaker at the banquet. His subject was "Ligation and Injection Treatment of Varicose Veins."

\* \* \*

The first medical officer to receive a discharge under the Army's point system is Major Wallace P. Ritchie of Saint Paul, who has amassed a total of 121 points. Taken completely by surprise, Major Ritchie received papers from The Surgeon General's Office within a few hours after he landed at Bolling Field in Washington

(Continued on Page 682)

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## OF GENERAL INTEREST

(Continued from Page 680)

from Italy directing him to proceed to the separation center at Ft. Sheridan, Illinois. Serving overseas for thirty-two months, Major Ritchie wears three battle stars in his campaign ribbon. He joined the Army in February, 1942.

\* \* \*

In appreciation of his half century of devoted service to their community, friends and neighbors of Dr. Charles Bosta in Ortonville honored him with a testimonial luncheon at the local golf club on June 28. About 100 persons attended, and eloquent tribute was paid to Dr. Bosta by Mayor A. K. Evans and other prominent citizens.

Dr. Bosta, senior member of Drs. Bosta, Karn and O'Donnell, is a native of Big Stone County, where his parents were the first white settlers. Having celebrated his seventy-third birthday on June 15, he considers it is time he began doing some of the things he has only dreamed about in the past, and he has announced his retirement from active practice, but insists this doesn't mean that he intends loafing by any means.

\* \* \*

Fifty years of medical practice—the last forty-three of them in Red Wing—were celebrated by Dr. L. E. Claydon with open house on June 12. During the same week he also attended the reunion of the Class of '95 at the University of Minnesota.

Immediately after his graduation Dr. Claydon left Minneapolis for Mazeppa, where he began an association with the late Dr. M. H. Cremer that continued for over forty years. A few years later, the offices were moved to Red Wing.

In 1912 the two physicians, with Drs. McGuigan, Haessley, and Hanson, organized the Medical Block Clinic, but Dr. Claydon withdrew several years ago, and he is now associated with his son, Dr. Howard Claydon, in the operation of the Claydon Clinic.

Older members of the profession may recall that Dr. Claydon won early distinction through his use of anti-toxin in a diphtheria epidemic in southern Minnesota at a time when its use was discredited by many leading doctors, and only two years after its introduction in Europe.

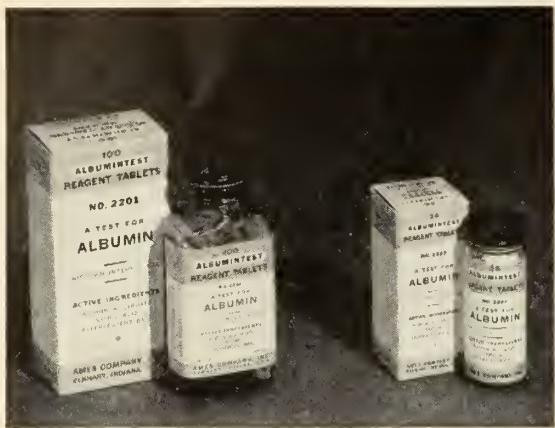
\* \* \*

The Medical and Surgical Relief Committee of America, 420 Lexington Avenue, New York 17, N. Y., has received an appeal for medical books from Dr. Severinghaus, member of the Medical Nutrition Mission in Italy. The Mission has set up in a hospital called the Polyclinica which is part of the University of Naples. The books are for the use of the Mission. Later it is intended to donate them to the Pediatric Clinic library.

The list of books requested is as follows:

1. R. P. Strong: Stitt's Diagnosis, Prevention, and Treatment of Tropical Diseases. Seventh edition. 2 volumes. Blakiston.

(Continued on Page 684)



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## OF GENERAL INTEREST

(Continued from Page 682)

2. Conant, Martin, et al.: Manual of Clinical Mycology. Saunders.
3. Saxl: Pediatric Dietetics. 1937. Lea and Febiger.
4. Brennerman's loose leaf Pediatrics. Nelson, 4 volumes.
5. Best and Taylor: Physiological Basis of Medical Practice. Williams and Wilkins.
6. McLester: Clinical Nutrition and Dietotherapy. Saunders.
7. Miller: Oral Diagnosis. Blakiston.
8. Peters and Van Slyke: Quantitative Clinical Chemistry. Williams and Wilkins. 2 volumes.

As a result of the war and German occupation, the European scientific world is at a tremendous disadvantage, not only because such an appallingly large amount of equipment has been destroyed or stolen, but also because it has been impossible for professional men to continue their normal pursuits of research, teaching, writing or studying. Progress in any direction has been impossible. Therefore, whatever Americans can do to help scientific knowledge in France, Italy and other countries to reach and keep abreast of the level attained in the United States, will be of inestimable value. It is for these reasons that an appeal is being made to American physicians.

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# Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 28

September, 1945

No. 9

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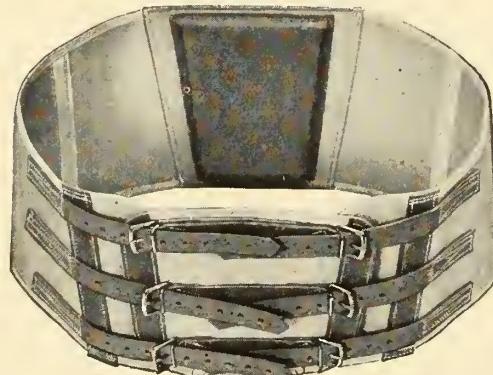
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# Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 28

September, 1945

No. 9

## CONFLICTS AND PSYCHOGENIC MALADJUSTMENTS INCIDENTAL TO AGE

M. W. KEMP, M.D.

Moose Lake, Minnesota

AGING is a physiological phenomenon common to all plant and animal life, to which mankind is no exception. It is a natural process just as birth, differentiation, or growth, and gradual decline when the meridian is passed is the expected contrast to the enthusiasm and energy of the second and third decades.

"Heaven gives our years of fading strength  
Indemnifying fleetness  
And those of youth a seeming length  
Proportioned to their sweetness."

Opinion varies as to when aging begins. Some observers think it begins in the ovum; others in the twenties. However, it is rather commonly agreed that subjective and objective indications can be seen in the majority of people in the second half of the fourth decade of life. Heredity plays an important part in whether the aging process develops early or late in most people, as well as many other factors such as occupation, diet, habits, et cetera.

When we begin to theorize as to the mechanism involved in aging, there is no general agreement. The arteries, the dispersal of cholesterol, the wear and tear of living from either internal or external factors, have been selected as the cause; others again stress the heart, brain, or endocrines. Another interesting theory is that of neuron responsiveness with delay in tissue repair as we grow older, or, if you wish, you can consider the theory that aging results from a diminution or extinction of the original vital force.

All manifestations of aging do not appear at

the same time. Each organ and each tissue has its own time curve of aging. Commonly accepted indications are presbyopia, deafness for high tones, graying and loss of hair, loss of teeth, loss of elasticity of skin, lessened capacity for energetic physical activity. The body experiences progressive dehydration and reduction of intracellular fluids, alterations in colloidal systems, as well as loss of elastic tissue. There is less ability to adapt to external changes and the individual has not the capacity he formerly did to recuperate and to resist infection.

A distinction should be made between those changes due to aging which are physiological, in contrast to those changes due to cardiovascular disease or presenile or senile degenerative processes. Frequently the physiological process is accompanied by degenerative changes in milder or more pronounced degree. These will be considered later in this discussion.

The following mental changes may be observed in normal individuals after they reach middle age, usually somewhere in the age period of forty-five to sixty.

Impairment of memory due to lack of attention.

Resistance to new ideas, manners and morals, and difficulty in learning new processes.

Worries about economical and social insecurity.

Decline in sex activities.

Inability to continue at prolonged mental activity.

Irritability, narrowing of interest, and intolerance, anxiety, insomnia.

Prepared for the annual meeting of the Minnesota State Medical Association, May, 1945.

SEPTEMBER, 1945

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Loneliness and longing for conditions and situations of the past.

Remorsefulness about shortcomings and earlier misbehavior.

Indecision, and difficulty in solving problems.

Accentuation of personality trends formerly held in abeyance, as paranoid or introverted behavior, apathy, increasing rigidity of personal standards.

Conflicts that arise in the involutorial period, which may be described as the age period of forty-five to sixty years of age in both men and women, result from the realization in the conscious or subconscious mind that there is beginning a decline of physical and mental assets, that we have passed the peak of our possibilities, and that our efforts are likely to result in less spectacular accomplishments in the future. There is some anxiety as to the future, of one's ability to carry on, to support the family, maintain a place in the economic world, and possible apprehension of ill health. In women the menopause emphasizes the change in the life cycle with the cessation of menstruation, and the realization that the child-bearing period is passed, and with many women there is a feeling that they are less attractive physically.

In most families some or all of the children have grown up, perhaps married and acquired homes of their own, leaving a sense of loneliness in the family circle, and while there is a sense of satisfaction in the fact that the children have become adults, there is some concern for their welfare. Particularly with women there is often difficulty in finding satisfactory interests to replace those of twenty-five years of homemaking, where their thoughts and activities have centered around the interests and activities of their growing family.

The average successful individual has become, after some twenty-five years or so in his business or profession, a carefully molded type because of the demands of his business and various contacts, social life, etc., and the pattern thus developed is seldom disturbed by contrasting or conflicting ideas. We play golf with people of the same views, and social gatherings, vacations, fishing trips are likely to be with persons who think and act much as we do. Seldom is there time or opportunity for thought about anything outside of our immediate circumscribed circle. Most of us

have had to forego hobbies or cultivation of things we had hoped to do in earlier years because of the demands of making a living and maintaining a home.

If, for any reason, this routine is interrupted, or for any cause it is necessary to make a change in our living habits, such an individual has much difficulty in adjusting to new situations. Business reverses, ill health, loss of an immediate relative or some other cause may necessitate a radical change in our habits of living. Physicians see such persons frequently who do not know what to do with themselves and experience much indecision and apprehension in facing the future because of the complete change in their life situation. In this critical involution period other persons, who may not have suffered any particular misfortune, become discontented and dissatisfied with their circumstances.

It is important that persons who have some type of conflict, such as has been referred to above, find something new in the way of philosophy. Each one must be studied individually as things that may appeal to one individual may not be applicable to another. Nearly everyone can be interested in some new type of activity or some hobby that will give them a new interest in life. Many have had restrained desires for some activity that now can be taken up with enthusiasm. It may be wood carving, or other art craft, needlework, photography, nature study, music, poetry, literature. A childless family can be interested in child adoption or some other child welfare activity. Others may renew or broaden their religious faith. Particularly in this involutorial period is it important to evaluate one's self so that on self-analysis the individual's character and philosophy is one with which he is content. It is desirable to develop a sense of humor, to externalize, to spend more time with others, to listen to their views, and to learn that the utmost in human satisfaction results from helping or doing things for others.

Those persons who have developed such a philosophy before the involutorial period, or those individuals who can do so during this transitional period in life, find many new sources of satisfaction and new courage which sustains them whatever the economic or physical situation may be.

Aside from the normal changes due to age, the involution period is one in which we see a num-

ber of mental breakdowns. They are most frequent in persons who have been inhibited throughout life with narrow horizons and limited diversions. Characteristic of involution psychoses are two types of symptoms. The commoner type is characterized by anxiety and agitation, with fears and apprehension. It is also distinguished by ideas that some terrible calamity is about to happen; fear of death in some terrible manner; belief that children or all members of the family are going to be killed; hypochondriacal ideas of having no visceral organs, no mind, etc. They worry about having committed the unpardonable sin, some indiscretion or misbehavior, perhaps quite minor, being magnified into a terrible crime. Suicide is an ever-present possibility.

In the other type paranoid symptoms predominate with ideas of persecution, the individual frequently turning against his closest relatives and dearest friends.

Recovery is likely to be prolonged. Endocrine therapy may sometimes be indicated but excellent recoveries are consistently obtained by the use of electroshock.

Following is a brief history illustrating a case of involution psychosis:

S. F., aged forty-eight, was a widow of six weeks, with two children, a daughter married and living in another state, and a son in the armed forces. Following the death of her husband, aged fifty-seven, from apoplexy, the patient did not sleep, became apprehensive that her son would be taken a prisoner, would be tortured, and was worried about her daughter, fearing that she would be ill-treated or abused by her son-in-law. She became extremely agitated, crying, wringing her hands, repeatedly asked the same questions, wanted to be assured that her children were safe and that she would not be harmed at the hospital. She was self accusatory, stating frequently that she could never be forgiven because of some sex indiscretion earlier in her life. She was worried about having a stroke; she complained of constipation.

Physical examination was essentially negative with the exception of a trace of sugar in the urine. She had a normal blood pressure.

Following three electro-shock treatments given at two-day intervals, she became more calm, showed some interest in occupying herself, began to notice other patients and to talk to them, and was not nearly so self-centered and apprehensive. She was given a total of fifteen electro-shock treatments, made a complete recovery and was released after nine weeks of treatment to her daughter, and a year later there has been no recurrence of her symptoms.

Still later in life we see the arteriosclerotic patient, and senile breakdowns with extreme loss of memory, aphasia, radical changes in personality, delusions, and deterioration.

In 1900 4 per cent of the population of the United States were over sixty-five years of age. In 1935 6 per cent were over sixty-five years of age. At the present time there are nine million persons over sixty-five years in the United States. Admissions to state hospitals have increased 65 per cent between 1910 and 1936 with an increase of 180 per cent in the age group of seventy and over for the same period.

Better living conditions and progress in medical science has resulted in more persons living to an advanced age, and with this situation more of the illnesses and problems that occur with aging and the aged are to be expected. Geriatrics will become a much more important specialty in the near future and the public will demand of physicians better understanding and medical care of the increasing number of persons who reach this period of life. Provision will have to be made for an increasing number of elderly persons in specialized hospitals or old folks' homes, public and private.

The tendency on the part of business concerns which has been apparent for some years to release older persons who may still be quite active and mentally quite capable, and to replace them by younger persons, leaves out of consideration the fact that while such individuals may have slowed up somewhat, most of them have, nevertheless, many desirable assets. Over the years we accumulate wisdom as the result of experience, and there is more self control and we make fewer mistakes due to haste and impulsiveness. In an emergency we are likely to be more stable. While there may be less enthusiasm there is a better realization of responsibility. Some provision for occupying such persons should be planned as many of them are still able to render valuable service to industry and to the economic wealth of our nation. Those unable to continue in full-time work could be given occupation for whatever period they are physically capable, and in this way they could continue to be self-supporting. This would relieve much of the anxiety and uncertainty as to the future that many persons feel as they grow older, and would enable them to avoid the necessity of accepting pensions or of living with children and grandchildren.

# PSYCHOSOMATIC MEDICINE

With Special Reference to the Neurodermatoses

M. A. TROXELL, M.D.

Duluth, Minnesota

PSYCHOSOMATIC medicine is defined as including those disorders where mental factors produce or influence a bodily illness.<sup>1</sup> Although any patient who becomes ill must undergo an emotional readjustment to his new environment, psychosomatic medicine does not include (1) the psychoses, in which the somatic factor is usually unimportant, or (2) various medical and surgical illnesses which are known to have a negligible psychic element.

## Classification of Psychosomatic Medicine

I. Disorders where emotional elements primarily produce the disordered function<sup>5</sup>—the psychoneuroses.

II. Disorders where emotional elements influence the clinical picture of an organic disease<sup>5</sup>, e.g., coronary occlusion<sup>11</sup>, tuberculosis<sup>8</sup>, and arthritis.<sup>11</sup>

III. Disorders which have strong emotional aspects<sup>8</sup>, e.g., pseudo-angina, neurocirculatory asthenia, essential hypertension, migraine, chronic cholecystitis, chronic appendicitis, irritable bowel, mucous colitis, ulcerative colitis, peptic ulcer, male and female climacteric, hyperthyroidism, diabetes mellitus, spontaneous hypoglycemia, obesity, dysmenorrhea, leukorrhea, epilepsy, Ménière's symptom complex, eyestrain<sup>11</sup>, the common cold<sup>2</sup>, accident susceptibility<sup>3</sup>, the neurodermatoses (generalized neurodermatitis, hay fever, asthma, anal genital pruritus, circumscribed neurodermatitis, dyshidrosis, urticaria, angioneurotic edema, rosacea, lichen planus, vitiligo, alopecia areata)<sup>6</sup>, and a host of others.

The following discussion does not include the psychoneuroses (Group I), nor the emotional complications of organic disease (Group II), but instead deals with the disorders which have strong emotional aspects (Group III). It is admitted that the emotional aspect is often not the only aspect, for allergy, infection, climate, hormonal and constitutional factors must be considered along with psychic trauma in neurodermatitis<sup>6</sup>, but my object is to emphasize the importance of the emotional factor.

Presented at the Staff meeting of St. Mary's Hospital, Duluth, May 3, 1945.

## Psychopathology

It has long been recognized that the individual is a resultant of the combination of the forces of heredity and environment, and that a variation in these forces produces a different individual.<sup>10</sup> Likewise, psychosomatic manifestations may be initiated by abnormal patterns in these forces.<sup>1</sup> When the environment provides sufficient stress in the constitutionally predisposed individual to cause an emotional strain, the resulting tension is converted into somatic symptoms through the autonomic nervous system.<sup>1</sup> There is typically a precipitating event or "Trigger mechanism" which adds the additional straw to the camel's back of environmental stress and heralds the onset of the symptoms.<sup>6</sup> The psychic attention to the

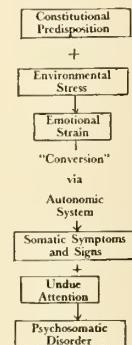


CHART A.

somatic symptoms is a stimulus which perpetuates the existence of the symptoms due to "facilitation of reflexes," and the result is a psychosomatic disorder.<sup>1</sup> The somatic factor is demonstrated by autonomically mediated symptoms and signs of organic disease<sup>1</sup> like pulse rate variations, precordial pain, cyanosis, edema, rashes, flushes, urticaria, itching, sweating, dermatographism, paresthesias, nausea, vomiting, anorexia, dysphagia, eructation, polyuria, urinary retention, dyspnea, tachypnea, enuresis, vertigo, et cetera.<sup>7</sup> The psychic factor is exhibited as an undue attention to the above symptoms and signs,<sup>1</sup> and perhaps deeper defects in mental attitudes.<sup>4</sup> (Chart A).

### Case Studies

A careful history and personality study is essential in the evaluation of a psychosomatic illness. In addition to the usual medical examination the following should be included: The presence of conflicts in personality, family, work, sex, and social environment; exposure to illness in family or friend; correlation of periods of stress with the appearance of symptoms as a defense against the resulting conflicts; remission of symptoms with the removal of the stress; and the presence of other psychosomatic manifestations.<sup>9</sup> The scheme of evaluation which has been used is shown in Chart B.

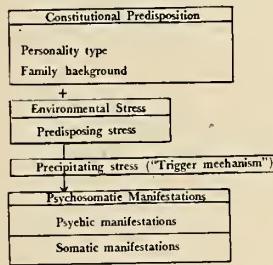
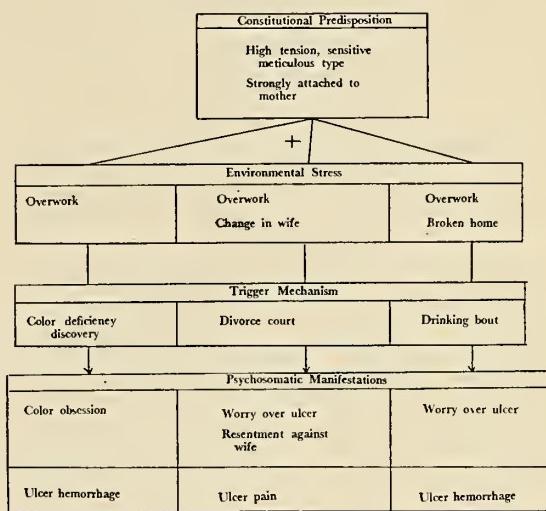


CHART B.

*Case 1—Peptic Ulcer.* The patient had been engaged in "nerve-wracking" work seven days a week in a railroad office arranging traffic schedules and had been working during the evenings for an ambulance service, averaging five hours sleep a night. In March, 1937, he took a physical examination and a color deficiency was discovered, preventing a change of work. He refused to accept the deficiency, but instead bought skeins of yarn and colored slides and spent his spare time identifying them. He became unable to sleep and would wake up at night seeing different colors. One night he felt nauseated, then vomited bright blood and passed tarry stools. The next day he collapsed at work and was taken to a hospital, where after three weeks of building up a gastroenterostomy was performed. Following convalescence there were no more symptoms, but during the next six months the patient's wife underwent a series of pelvic operations which resulted in a change of life. During the next year she became very irritable and had many emotional outbursts, and finally the patient was granted a divorce, experiencing his first recurrence of epigastric pain in court. He started to drink nearly every day, and went to live with his mother, to whom he is very much attached. The ex-wife soon began to boast about the amount of her alimony, and the patient became very resentful; his pains became more severe after going to court to obtain a reduction in alimony. He cut his evening work to three evenings a week, but still had intermittent ulcer pain relieved by Amphogel and milk. In December, 1944, he went on a hunting trip, and after drinking five quarts

of whisky in five days he collapsed with a hemorrhage. During the next month he recuperated at home, and was asymptomatic when he came into the hospital in February, 1945, for a gastric resection. Examination re-



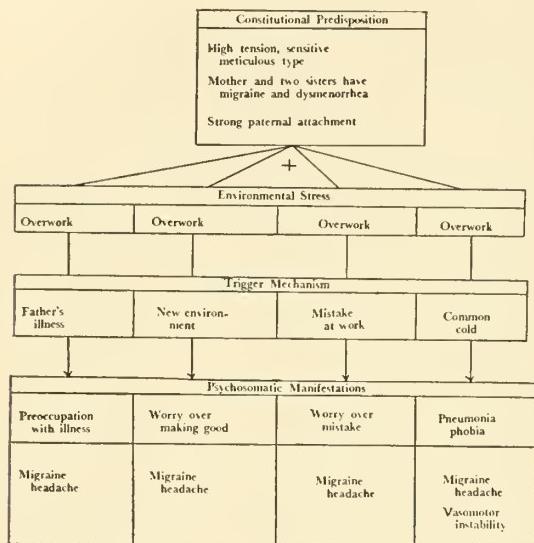
CASE 1.

vealed a thin, nervous, intelligent white male of thirty-five, hemoglobin 76 per cent, a trace of occult blood in the stool, blood pressure 110/65, and a "possible ulcer of the stoma" on roentgen examination. He received bed rest and sedation, and the postoperative course was good. Since the operation the patient has not been working, smoking or drinking, and is well and happy.

*Case 2.—Migraine.* The patient comes from a large devoted family and is used to being the center of attention. Her mother and two of her sisters have migraine headaches and dysmenorrhea. She entered high school at the age of twelve and immediately swung into many extracurricular activities. Her father became ill, and the patient worried considerably about this. At this time she began to have severe hemicranial headaches starting over one eyebrow or the other and working back to the frontal and occasionally the temporal region. These would be preceded by a "dumpy" feeling, and she would sometimes see gray crystals. There was no increased difficulty during menstrual periods. During the time she was in high school she continued to worry about her father and have headaches every month or two. After her father died the patient had no more headaches until she moved to Duluth. Here she was alone for the first time, worried considerably about making good in her first job, and the headaches returned. She has now made friends, and her only headaches in six months occurred when she was worried about a mistake she had made at work, and disappeared after taking a "Lextron" tablet! Recently another headache started when she became ill with a cold. She worried about having pneumonia, taking her temperature every five or ten minutes! Examination was negative except for a thin

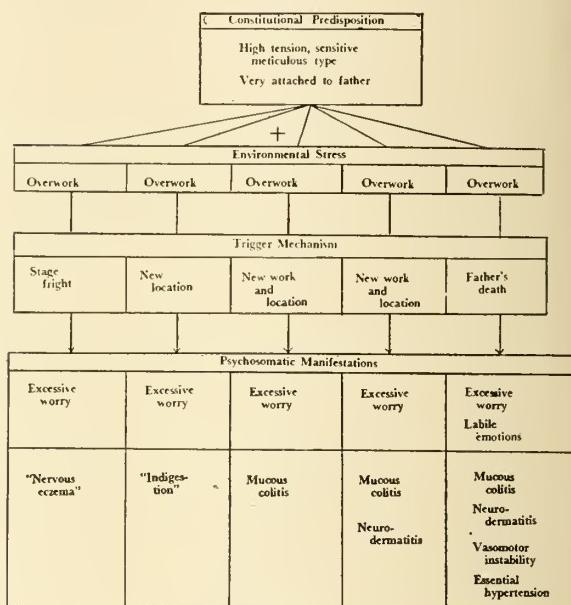
## PSYCHOSOMATIC MEDICINE—TROXELL

nervous white female of twenty with a sore throat. After being reassured, her temperature fell from 103° to 98.6° in five minutes, her headache disappeared, and she went to work the next day.

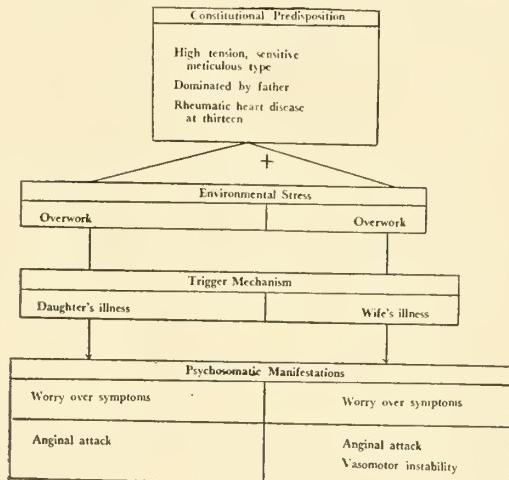


CASE 2.

patient experienced his first episode of precordial pain and shortness of breath, which lasted only one day. He "took it easy" at work a short time, but soon was intensively working and worrying over the



CASE 4.



CASE 3.

*Case 3.—Pseudo-angina.* The patient had rheumatic heart disease when he was thirteen but had no further difficulty. He got along well with his brothers and sisters and was very attached to his mother, but for two years had serious arguments with his father about his choice of a wife. His married life has been happy, but his wife has had several operations for vague abdominal complaints and his youngest daughter has always been frail because of "rheumatism." Last July he received a promotion to foreman and worked hard to make good. Soon afterward his daughter had a recurrence of her "rheumatism," and at this time the

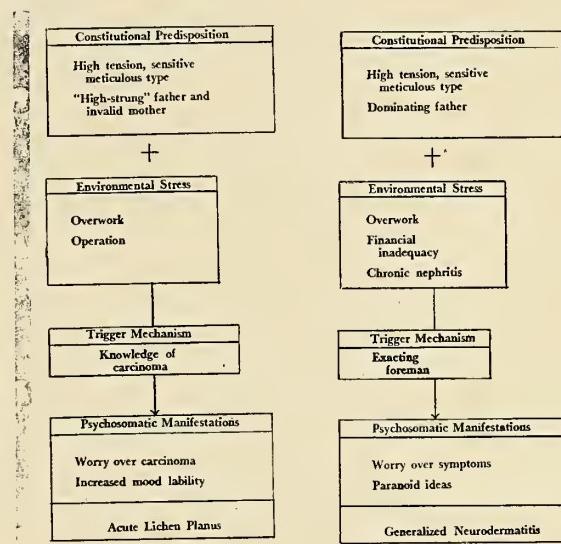
possibility of making a mistake. In March, 1945, his wife was again hospitalized, and the day after she came home he was brought into the emergency room complaining of sudden precordial pain, weakness and shortness of breath on getting into his car. When seen by the intern he was standing up and comfortable and was sent home. An hour later he was back with the same symptoms and was admitted. Examination was negative except for a red-faced, well-developed white male of forty, with a soft systolic apical murmur, blood pressure 130/100, cold sweat in axillae, and a normal electrocardiogram. He received bed rest and sedation, and went home after two uneventful days in the hospital.

*Case 4.—Localized Neurodermatitis.* The patient had no trouble until she entered training at the age of twenty-one when she experienced episodes of sleep-walking for a few months and a deafness in the left ear of unknown cause. Three years later on her first day teaching before a class she noticed a red pimply eruption of the face which was diagnosed as "nervous eczema." It took her five years to feel at ease before a class, and during this time the eruption slowly spread to involve the entire face and flexor forearms. During the next five years of teaching the eruption slowly subsided. When she moved to a new teaching position she was afraid of the increased responsibility and noticed at this time the onset of "indigestion" which was diagnosed as gall-bladder trouble although no stones were found. Food allergy tests were made and she

was told not to eat potatoes or bananas. After nine years at the second position the hearing in her right ear began to fail and she was compelled to work as a seamstress in a new location. She worried considerably about her competence and developed constipation alternating with loose stools containing mucus. After five years of this she moved again to a new position as caretaker, and a red itching patch started in the right postauricular region. This decreased in severity as she became accustomed to her new duties. Two years later in January, 1945, she was severely upset by the death of her father, and the itching patch spread to the flexor neck region. For the past two weeks she has been bothered with loose stools and generalized itching. Examination revealed a very nervous, frail white female of forty-eight who burst into tears when questioned about her father's death. Her blood pressure was 190/110, there were red scaling patches in the right postauricular and flexor neck regions, a dry scaling scalp, cold sweaty palms and axillae, and numerous scratch marks over otherwise normal skin. She was discharged after four weeks of bed rest, sedation, local therapy and explanation of symptoms in a markedly improved condition, although still very nervous.

*Case 5.—Acute Lichen Planus.* The patient had an adequate home life except for a father who was "high-strung" and a mother who was an invalid her last fifteen years. She had a college education and taught school four years before her marriage. Her husband states that she has always been nervous and "flies off the handle" easily, especially during the last two months. She tends to be very meticulous about her housework and constantly engages in outside activity such as Red Cross work. She had no difficulty until she entered the hospital in October, 1944, with a hard painful breast lump of two months' duration. During a two weeks' convalescence from a right radical mastectomy she was told she had cancer but that it was all removed. She went back home and attempted to continue with her previous activities "just as though nothing had happened." About the first of January, 1945, she noticed a red, mildly itching eruption behind her ears, and a month later two small reddish-purple pimples appeared on the dorsum of a finger. In the next week this spread to the dorsal hands, wrists, and left forearm, gradually becoming more confluent, to result in a severely itching purplish patch with fine desquamation. About the middle of February similar patches appeared on the anterior thighs, extensor knee surfaces, and anterior and posterior neck surfaces, her upper limbs became painfully swollen, and her mouth, lips, nose and eyes became red, swollen and sore. The next week an examination revealed a thin nervous white female of fifty-two with a right mastectomy scar, swollen upper extremities, a soft olive-sized node in the left axilla, a white reticulated lesion on the left buccal membrane, and the dermatological findings outlined above. After two weeks of bed rest, sedation, local therapy and explanation of symptoms she was discharged in a markedly improved condition.

*Case 6.—Generalized Neurodermatitis.* The patient came from a large family and got along well with his siblings. His father was an "old German" with very strict ideas and required all the children to work long



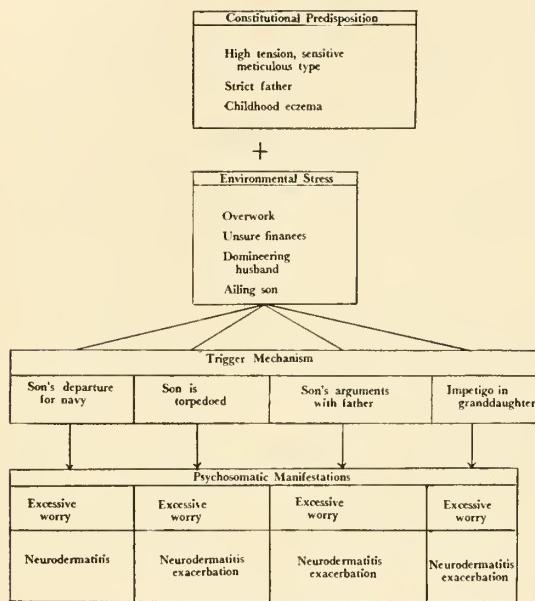
CASE 5.

CASE 6.

hours and turn all their wages into the family fund. The family was constantly in stringent circumstances and the patient was unable to get married until he was twenty-nine. He has had a happy married life but was on relief for three years during the depression. For the last ten years he had been working all alone as night operator in a power plant. Three years ago a new foreman began to find fault with his work. At this time he developed some itching, weeping pimples on his left instep and later the dorsum of the foot, which he thought was "athlete's foot." The foreman became more and more critical until "nothing I could do would satisfy him." He finally complained to the superintendent and a meeting between the company and the union was called. After this the foreman left him alone, but "little things" the foreman had said came back via the grapevine. Two years ago the patient learned he had chronic nephritis and has since been in the hospital several times for blood transfusions and rest. The foreman has been outwardly friendly and at one time gave him a piece of cake, but he became ill after eating it and is convinced the foreman tried to poison him. Two months ago while the patient was in the hospital he developed itching pimples on both palms which formed small blisters before breaking. He received local heat and roentgen therapy, but the lesions spread to the dorsum of the fingers. The day after discharge the back of his forearms became red and swollen with a severely itching papular eruption which during the next week spread to involve the face, arms, back, abdomen, chest and lower extremities. The next six weeks the skin gradually became coarse and thick.

The patient entered the hospital on January 27, 1945, and an examination showed a thin, hyperactive white

male of forty-five with dry lichenified skin over the lower back, neck, back of ears and all extremities, trembling fingers, pale leaden facies, uremic breath, heart enlarged to the left anterior axillary line, blood pres-



CASE 7.

sure 170/120, two plus pitting edema of the shins, faint trace of albuminuria, 1,620,000 red cells, 15,800 white cells, 4.8 grams hemoglobin, urea nitrogen 75, creatinine 6.9, and 5.8 milligrams per cent plasma proteins. While he was in the hospital the foreman was very nice to him and told him not to worry about anything. He was discharged as considerably improved after three weeks of bed rest, sedation, soothing local therapy and explanation of symptoms.

*Case 7.—Generalized Neurodermatitis.* The patient gave a history of childhood eczema until she was seven years old. She came from a large, devoted family but was closely supervised and married the first man who went out with her. Her husband is a political "ward healer," and the family income has always been a worry. He has a very quick temper and the patient is continually afraid she will do something that will send him into a rage. She has two boys, one being ill in the hospital with a hopeless muscular atrophy. When her other boy left for the Navy in September, 1943, the patient noticed a red, itching, pin-point papular eruption on the flexor surfaces of the neck and forearms which began to weep when scratched, and her change of life began. When she learned that her boy had been torpedoed at sea in June, 1944, the rash extended to the back of the neck, arms, back and chest, gradually subsiding to leave the skin coarse and thickened. The boy was discharged after three months' treatment in a naval hospital for a rash he developed on the boat shortly after being torpedoed. After returning home in September, 1944, he had numerous arguments with his father and the patient's skin flared up again

with a severely itching, red papular eruption which became coarse and thick, complicated by breaking open and weeping where it was scratched. She was hospitalized for two weeks with some improvement under local therapy, but the condition again became worse on returning home. Examination at a second admission in January, 1945, disclosed a thin, nervous, white female of forty-three, a soft, persistent systolic apical murmur, numerous red and white cells of undetermined origin in the urine, and a lichenified, indurated skin over the arms, back, abdomen, chest, and face exhibiting numerous scratch marks. During four weeks in the hospital she improved considerably on bed rest, sedation, local therapy and explanation of symptoms. She was discharged in late February, 1945, but on returning home she observed an impetigo in her infant granddaughter and her skin became worse than ever.

### Conclusions

1. Mental factors may be a primary or a contributing cause in a wide variety of body illnesses.<sup>6</sup>
2. When environmental stresses are impressed upon a constitutionally predisposed individual, psychosomatic manifestations are produced in the body organs and integrating systems.<sup>1</sup>
3. Individuals with psychosomatic disorders often have the following characteristics:
  - (1) Hyperactivity.<sup>6</sup>
  - (2) Hypersensitivity, with suppressed emotion ranging from irritability to resentment.<sup>6</sup>
  - (3) Undue attention to symptoms.<sup>1</sup>
  - (4) Lack of insight.<sup>9</sup>
  - (5) Meticulousness and diligence.<sup>6</sup>
  - (6) Domination by parent and restriction of early social life.<sup>4</sup>
  - (7) Exposure to illness in family or friend.<sup>9</sup>
4. The following therapeutic principles have been helpful<sup>6</sup>:
  - (1) Putting the body at rest.
    - (a) Systemic sedation.
    - (b) Soothing topical applications.
  - (2) Putting the mind at rest.
    - (a) Explanation of symptoms.
    - (b) Environmental manipulation.
    - (c) Psychotherapy.

### References

1. Bauer, Julius: Psychosomatic medicine. *Mod. Med.*, 13: 57-64, (Feb.) 1945.
2. Despert, J. Louise: Emotional factors in some young children's colds. *M. Clin. North America*, 28:603-614, (May) 1944.
3. Dunbar, Flanders: Susceptibility to accidents. *M. Clin. North America*, 28:653-662, (May) 1944.
4. Greenhill, M. H., and Funesinger, J. E.: Neurotic symptoms and emotional factors in atop dermatitis. *Arch. Derm. & Syph.*, 46:187-200, (Aug.) 1942.
5. Hinsie, Leland E.: A clinical description of psychosomatic medicine. *M. Clin. North America*, 28:525-552, (May) 1944.
6. Kendall, R. F.: Personality aspects of skin diseases. *Staff Meet. Bull.—Hosp. Univ. Minnesota*, 16:202-205, (Feb. 9) 1945.
7. Moorhead, John J.: Traumatic neuroses. *M. Clin. North America*, 28:663-703, (May) 1944.
8. Schiele, Burtrum C.: Psychosomatic medicine. *Staff Meet. Bull.—Hosp. Univ. Minnesota*, 16:97-105, (Nov. 24) 1944.
9. Schwartz, Louis A.: The psychosomatic history. *Harper Hosp. Bull.*, 1:92-95, (Mar. 1) 1942.
10. Wechsler, I. S.: A Textbook of Clinical Neurology. p. 703. Philadelphia: W. B. Saunders Co., 1943.
11. Weiss, Edward and English, O. S.: Psychosomatic Medicine. Philadelphia: W. B. Saunders Co., 1943.

## SURGICAL REPAIR OF INGUINAL HERNIAS

E. W. MINTY, M.D.

Duluth, Minnesota

and

F. W. MINTY, M.D., F.A.C.S., F.I.C.S.

Rapid City, South Dakota

IN view of the fact that able and experienced men throughout the country report statistics varying from 5 to 50 per cent failure, benignly termed "recurrence," in the repair of inguinal hernias, the author feels that a careful study of this surgical problem should be undertaken. In view of this high percentage of failure a review has been made of the recent literature on this subject, in an endeavor to summarize some of the reasons why failures occur and to try to arrive at some method of procedure or combination of procedures, which would promise better results.

As LaRoque<sup>9</sup> has pointed out, "No statistical studies of recurrent hernias can be made to tell the whole truth and statistics can be made to conceal anything, even the truth. The failure of any method of operating for any disease cannot be determined with accuracy from statistics alone. If the procedure is based on sound principles, success or failures are representative rather of the surgeon than of the method. Skillful surgeons often have success with poor methods, amateur and careless operators have a large number of failures by any method."

In this view the author heartedly concurs and therefore will refrain from detailed statistics as much as possible, except to illustrate a pertinent point, and will discuss the principles of the repair of hernias.

There is much room for improvement in operative results for the repair of inguinal hernias. One can hardly conceive that the numerous procedures used in the repair of hernias are without merit, as many men report successes in their use. Undoubtedly much depends on the skill and experience of the surgeon, as well as the character, type and duration of the hernia in various individuals. However, taking all of these many factors into account, it seems that 5 to 50 per cent failures in this age of modern surgery should make us pause and attempt to analyze why this should be, and to see if the methods that he is now using are producing results comparable with others and whether they can be improved upon.

The causes of inguinal hernia are uniformly accepted and recognized and need very little discussion, except that many men are coming to feel that inguinal hernias are congenital rather than acquired, and to realize that the sac is of paramount importance in the formation of a hernia in this region. Etiology is of importance, largely from a medical-legal aspect, particularly in this day of industrialization, compensation, and employers liability. The weight of medical opinion in regard to the cause of hernias is that they are a result of a congenital weakness in the individual, and the only effect of exertion or trauma is to make evident a defect that already existed or to increase in size a hernia that was present.

The anatomy involved is likewise fairly well understood by the average surgeon, with the exception of the intricate muscular fibers composing the internal ring of the abdominal wall and their relations to a hernia. Banerjee<sup>1</sup> points out that this muscular structure made up of muscle fibers of the transversalis, internal oblique and cremasteric, compose the internal ring and that in contraction they close this structure and act as a bulwark against increases in intra-abdominal pressure. He also points out that the arteries supplying these structures are end-arteries, arising from the inferior epigastric and superior pudendal vessels, and they have no collateral circulation. He stresses the importance of this in the usual repair of hernias, and this factor will be alluded to later. Another factor which cannot be stressed too emphatically, is the factor that the structures in the spermatic cord are bound together by loose areolar tissue, making the cord structures loosely bound together and thereby protecting them from injury and trauma and play no part in the formation of indirect hernias. Another factor which has not appeared in recent writings, is the factor that the fibers of the internal oblique muscle lie at right angles to those of the external oblique and the muscle contractions tend to pull away from Poupart's ligament. It is important to keep this factor in mind in the normal anatomy of this region. Banerjee<sup>1</sup> also said that in the exami-

nation of two hundred male patients during laparotomy, he found a dimple or funnel of varying depth at the internal ring in 199 cases, and therefore, I think it is fair to assume that this dimple or funnel should be included in the normal anatomy of this region.

In the pathology of inguinal hernias, one could dwell at great length in enumerating the various pathological conditions which can arise as a result of the hernia. A lengthy discussion of these various conditions is not necessary, as they are fairly familiar to all; except to state that the longer a hernia is present, the more abnormal conditions develop. To illustrate; a moderate sized inguinal hernia of ten years' duration and a truss worn over four months is apt to show adherent structures in the sac, a thickened chronically influenced peritoneum at the internal ring, atrophy and thinning of the muscles of the abdominal wall adjacent to the hernia, flattening of the spermatic cord with a separation of its component parts, a large internal and external ring and possibly, scrotal disturbance, due to constant pressure of the hernial sac and its contents and the pressure of the truss.

At this point it is important to analyze the various operative principles to be taken into consideration in the repair of these hernias and the principles involved to prevent recurrences.

As surgeons, we have a tendency to regard conditions within the abdominal cavity from the viewpoint of the skin inward. This is due undoubtedly to our concept of surgery from its incipiency. Therefore, I feel that one of the errors that we make is viewing hernias from the outside in. The Bassini operation, I believe, illustrates this viewpoint.

I would like to submit for your consideration a simile as an illustration; a dam holding back a large body of water in comparison to the abdominal wall and a hernia. A body of water acts upon the dam in much the same way as the intra-abdominal pressure acts upon the abdominal wall. Any weakness in the dam produces a leak; any weakness in the abdominal wall produces a hernia. As the leak in the dam progresses, the opening on the more resistant upstream surface of the dam is usually very small; where the water comes out of the back of the dam the opening gradually becomes larger. The internal opening of the hernia usually is small and the external

opening gradually gets larger. The engineer, in repairing the dam, does not fill in the downstream surface of the dam to correct the condition, but immediately repairs the face of the dam. The surgeon using methods of repair in vogue, attempts to repair the outside of the hernia instead of the inside, which meets the full onslaught of the abdominal pressure. So it might be well to consider a change of viewpoint in our thinking and conception of hernia repairs.

High ligation of the sac was first stressed by Bassini and is being stressed more and more today. Some men feel that recurrences are due solely to not ligating the sac high enough. In recent literature, particularly from men advocating the intra-abdominal repair of hernias, the complete removal of the sac is stressed, as ligation cannot help but leave a dimple in the peritoneum at and above the internal ring. I feel that the second operative principle should be the removal of the sac in its entirety, being careful to eliminate the dimple or funneling in the intra-abdominal surface.

The third principle, first advocated by Halstad, was in regard to the closure of the internal ring and he went so far as to reconstruct the internal ring in his modification of the Bassini operation. LaRoque<sup>9</sup>, Banerjee<sup>1</sup>, Sutton<sup>14</sup>, and Williams<sup>15</sup> in the recent literature, advocate repair of the internal ring in the intra-abdominal herniorrhaphy. So our third principle should be repair of the internal ring as far as possible.

The fourth and final principle should be to minimize trauma in this region. In the repair of hernias from outward in, the sac must be separated from the cord structures, which in large hernias is a tedious, sometimes difficult and traumatizing procedure not only to the cord but to the atrophic muscle structures around the internal ring as well as to the blood supply and nerve supply adjacent thereto. If one bears in mind the pathological conditions as above stated, one can readily see where more damage can be done at the time of operation than the original hernia could produce if left alone.

Let us briefly review the commoner operations to see how they fit into the above-mentioned principles. The Bassini operation or its modifications has long been the classical repair for inguinal hernias. Ligation of the sac, we find, does not eliminate the dimple in the parietal peritoneum,

leaving one of the commonest causes for recurrence of the hernia. No attempt is made to strengthen the internal ring in this operation. Considerable trauma results from the dissection of the sac from the cord, interfering with the cord structures to the point that torsion of the cord, constriction of the cord, emboli, testicular atrophy and epididymitis are complications which we too frequently see. Galli<sup>6</sup> points out that it is problematical if any type of suture joining the internal oblique and transversalis to Poupart's ligament is to stay for any length of time, irrespective of the suture material used. He bases this opinion on observations made on reoperating several recurrent hernias and feels that this is due to too tight suturing and the inability to free the muscles and the ligament of areolar tissues, so that the resulting adhesion that takes place is no stronger than the areolar tissues. The direction of pull of muscle fibres is away from Poupart's ligament.

As far as failures are concerned, statistics in the literature show recurrent rates from 5 to 50 per cent in repairs of inguinal hernias where the Bassini or its modifications are used. The highest percentage of recurrence is, of course, in the direct hernias of long standing and with complications. The use of fascia sutures, as advocated by McArthur in 1901 and popularized by Galli and LeMesurier<sup>8</sup>, has reduced the recurrence rate to a much lower level. Burton<sup>5</sup> reports a recurrence rate of 0.9 per cent in 385 repairs. Ryan<sup>10</sup>, using the same procedure, reports no recurrences in 106 repairs, after following up ninety-two from six months or more.

Silk and cotton suture material are being used quite successfully in recent years and some men feel that these materials should be used routinely in the Bassini operation or its modification. Silver wire, as advocated by Halstad, also has its proponents. More recently fine stainless steel wire has its supporters.

I feel that the injection treatment for inguinal hernias should be mentioned in this résumé. Obviously it fulfills none of the principles as outlined, and its basic principle is to produce trauma and scar tissue in the abdominal wall, in the endeavor to strengthen it. As scar tissue is the most fragile of the connective tissues, one can readily see why the percentage of failures runs from 50 to 80 per cent. Personally, I have

nothing but condemnation for this procedure, as I feel that it is wrong in principle and the chances of failures are too great.

In the intra-abdominal repair of hernias, as advocated by LaRoque<sup>9</sup>, Banerjee<sup>1</sup>, Sutton<sup>14</sup>, Bearse<sup>2</sup>, and Williams<sup>15</sup>, we find that these men view hernias from the inside out, and they advocate removal of the sac, the obliteration of the peritoneal dimple, and the closure of the internal ring. The procedure minimizes, nearly to negligence, trauma to the muscular and cord strictures in the repair of the abdominal wall. Thus, as far as the surgical principles involved in the repair of hernias to prevent recurrence, the intra-abdominal operation for the repair seems the most logical.

Advocates of the intra-abdominal repair of hernias are very prone to disregard statistics relative to failures. LaRoque<sup>9</sup>, who seems to have championed this procedure has worked out no statistics but states, "The only failures that can occur in this method of operation, would be those due to breaking of sutures, the result of coughing or the opening of the wound with subsequent scar formation, resulting from infection." Sutton<sup>14</sup> reports his observations on one hundred cases with 2 per cent known recurrences, after following up 82 per cent of the cases for two years. Banerjee<sup>1</sup> reports sixty-six cases with no recurrences in six months to three and one-half years.

In our experience with eighty-three cases operated upon by this method, no known recurrences have occurred. However, the follow-ups have been incomplete in our series and are still in progress. Also, after repairing fifty-eight inguinal hernias of all types, using several modifications of the Bassini operation, including the use of fascia, I find that my own recurrences or percentage of failures is 15 per cent by employing these methods. However, none of those repaired with fascia sutures has recurred to date.

So that the intra-abdominal procedure may be better recognized and its merits better understood, the technique of the intra-abdominal procedure will be discussed. This procedure is not new and was first suggested by Annandale in 1876 and Trait in 1883, and others more recently.

This operation can be employed during the course of any lower abdominal operative procedure and any incision below the umbilicus is adequate, except the usual McBurney incision

for appendectomies as it is too far from the field of operation and does not allow adequate exposure. Some men, particularly if bilateral hernias exist, use a midline or rectus incision, thus affording access to both sides. However, LaRoque employs the usual inguinal incision, extending it upwards approximately one inch to allow room to enter the abdomen just above the internal ring. As we are discussing the repair of hernias and not intra-abdominal conditions, the technique as advocated by LaRoque will be discussed. This operation is well illustrated in LaRoque's articles<sup>9</sup> and in Bickham's operative surgery.<sup>3,4</sup>

After the skin and subcutaneous tissues are incised, the aponeurosis of the external oblique is exposed, the external ring split and the fascia divided as in the usual procedures. No attempt is made at this stage of the operation to free the cord or the sac. Approximately one inch above the internal ring the muscle fibers of the internal oblique and transversalis muscles are split and the peritoneum opened, as in the McBurney incision.

On opening the peritoneal cavity, the internal opening and the neck of the sac comes into view within one inch of the opening in the peritoneum. If the sac contains any of the abdominal structures, these are removed by traction and sharp dissection, if necessary, under full vision. A finger is inserted into the sac to ascertain its depth, and the size of the internal ring. By dissecting retroperitoneally, all tissues can be controlled and the neck of the sac is freed from the inguinal canal. By pulling upward on the peritoneum, traction is placed on the sac, which is then dissected with sharp dissection as far as feasible and the sac is severed in its distal portion. Then the entire sac is removed from the parietal peritoneum. It is of little importance whether the entire sac is removed by this procedure. It may extend all the way into the scrotum. The main object is to remove the proximal portion of the sac. The remaining sac will become obliterated when the abdominal pressure is relieved.

The internal ring may be tightened by one or two mattress sutures placed just medial to the cord and into the canal for at least one-half inch, making the internal ring approximately one-half inch thick. Care must be taken not to injure the internal epigastric vessels. The peritoneum is

then closed as in any operative procedure and the muscles allowed to fall back into position. The outer abdominal wall is then inspected and any repair work that is necessary to strengthen the wall may be done as indicated by the condition found.

Femoral hernias are repaired in the same manner. In the repair of direct hernias, the same procedure is used and the transversalis fascia sutured to close the defect on the inner side of the abdomen after excising the sac.

One can readily see that in this procedure trauma is at a minimum and the principles involved in the repair to prevent recurrences have been fulfilled. Some may feel that opening the peritoneal cavity is an unnecessary risk for the repair of hernias. However, it allows adequate exposure for the removal of the appendix, either prophylactically or therapeutically, and to properly treat the sliding hernia, incarcerated or strangulated hernias under full vision and with a minimum of trauma to the abdominal wall and the cord. These advantages certainly outweigh the danger and objection to intra-abdominal work with our present surgical technique.

Thus we see that this operation has many advantages which the other procedures do not have, not only for the benefit of the patient but to the surgeon, as the technique is simpler, less tedious and less traumatizing to tissue, and the complications which occur with former procedures are less apt to occur.

In regard to the repair of the anterior abdominal wall, it is my feeling that fascia strips either from the aponeurosis of the external oblique, as advocated by McArthur and Gallie<sup>8</sup>, or strips of fascia lata obtained by the use of the Masson fascia stripper should be employed. These fascia strips are used to suture the conjoined tendons and the internal oblique and transversalis muscles to the shelving portion of Poupart's ligament, after painstaking removal of all areolar tissue from the ligaments and the muscles and stay suturing the fascia strips in place with fine silk sutures.

Gollie<sup>7</sup> states that the suturing of the internal oblique to the inguinal ligament will not prevent recurrence and he advises lacing of fascia sutures through the fascia of the rectus abdominus to strengthen the wall, thus forming a fascia network of the inguinal triangle.

The external oblique is closed with interrupted silk sutures either under or over the cord, as the operator chooses. Personally, I like to suture this structure with a fascia strip, transplanting the cord under the skin, as I feel that it adds an extra supporting structure to prevent formation of a direct hernia, especially at the pubic tubercle.

Therefore in summary, the surgical repair of inguinal hernias has been reviewed and principles propounded, which should always be considered in the repair of inguinal hernias to prevent recurrence, namely:

1. A change in our thinking and viewing the repair of these hernias from the opposite aspect, namely, from the inside out rather than from the outside in.
2. Complete removal of the peritoneal dimple, diverticulum or the entire sac to prevent recurrence.
3. A firm closure of the internal ring.
4. The minimizing of trauma and adequate repair of the abdominal wall as indicated.

An attempt has been made to evaluate the various procedures advocated in the recent literature, to determine if some procedure or combination of procedures would promise a lowering of the percentage of failures in the repair of inguinal hernias.

The intra-abdominal repair, as described by LaRoque<sup>9</sup>, seems to fulfill all of the above prin-

ciples and hold the most promise for success in the prevention of recurrences.

Also, as the use of fascia suture is sound in principle, I feel that it should be used in the repair of the abdominal wall, as the percentage of failures seems to be definitely reduced by its use.

In conclusion, it seems advisable to prevent recurrences in inguinal hernias by employing the intra-abdominal repair and supplementing this repair by the use of fascia sutures, the author feels that if these procedures were more widely recognized among surgeons, our failures would drop from where they are now, of between 5 and 50 per cent to probably around 2 to 5 per cent, after universal usage, and when improvements naturally evolve.

### Bibliography

1. Banerjee, P.: Intra-peritoneal herniorrhaphy in inguinal hernia. *Surg. Gynec. & Obst.*, 54:706, 1932.
2. Bearse, Carl: Incidental intra-abdominal hernia repair, *Am. J. Surg.*, 52:371, (May) 1941.
3. Bickman, W. S.: *Operative Surgery*, Vol. 4, pp. 165-190. Philadelphia: W. B. Saunders Co., 1924.
4. Bickham, W. S.: *Operative Surgery*, Vol. 7, pp. 345-349. Philadelphia: W. B. Saunders Co., 1924.
5. Burton, C. C.: Use of fascia sutures in inguinal hernia, *Surg. Gynec. & Obst.*, 77:530, 1943.
6. Gallie, W. E.: Free transplantation of fascia and tendon, *J. Bone & Joint Surg.*, 4:609, 1922.
7. Gallie, W. E., and LeMesurier, A. B.: Living sutures in operative surgery. *Canad. M. A. J.*, 11:504, 1921.
8. Gallie, W. E., and LeMesurier, A. B.: Transplantation of fibrous tissues in repair of anatomical defects. *Brit. J. Surg.*, 12:289-320, 1924.
9. LaRoque, G. P.: Intra-abdominal method of removing inguinal femoral hernia. *Arch. Surg.*, 24:189-203, 1932.
10. Ryan, W. J.: Living fascia sutures in repair. *Surg. Gynec. & Obst.*, 77:535-538, (Nov.) 1943.
11. Shelley, H. J.: Incomplete indirect inguinal hernias. *Arch. Surg.*, 41:747-771, 1940.
12. Shelley, H. J.: Direct inguinal hernias. *Arch. Surg.*, 41:857-872, 1940.
13. Stone, H. B.: *Lewis' Practice of Surgery*, Vol. 7, Chap. 9, pp. 1-28. Hagerstown, Md.: W. F. Prior Company.
14. Sutton, L. E.: Intra-peritoneal approach for repair. *Am. J. Surg.*, 104:1030-1037, (Dec.) 1936.
15. Williams, C.: The advantages of the abdominal approach to inguinal hernia. *Ann. Surg.*, 108:917-922, 1938.

## ASTHMA AND FORMATION OF HERNIA

LOUIS E. PRICKMAN, M.D., and EDWIN D. BAYRD, M.D.

Rochester, Minnesota

A STHMA, with its attendant coughing and increased intrapulmonary and intra-abdominal pressure, contributes both to the development and to the recurrences of various types of hernia.

The patient with asthma has been shown<sup>2,4</sup> to be at a fundamental disadvantage when contemplating operation, not only because of diminished respiratory reserve but also because of the

deleterious effect of coughing on the healing of the operative wound. In addition, the not unusual development of orthopnea may compel the patient with asthma to sit upright, which throws additional disruptive pressure on the fresh wound.

During an attack of asthma, the accessory muscles of respiration, including the abdominal muscles, are constantly straining to aid exhalation. This results in increased intra-abdominal pressure. Soreness of these straining muscles is fre-

From the Division of Medicine, Mayo Clinic (Prickman) and the Mayo Foundation (Bayrd—Fellow in Medicine).

quently complained of by patients during or after prolonged attacks of asthma and visible evidence of this muscular overwork is occasionally seen in the prominently developed abdominal muscles of patients with asthma and emphysema.

Coughing, which is common in cases of asthma, produces a sudden severe increase in intra-abdominal pressure and increases intrathoracic pressure. It has been shown<sup>1</sup> that coughing increases the intrathoracic pressure as much as 100 mm. of mercury or more, a pressure which is transmitted to the abdominal cavity. When there exists some congenital or acquired weakness in any region where hernias commonly occur, the intermittent and marked increase in intra-abdominal pressure will definitely contribute to the formation of a hernia in such a weakened region. If, in addition to having asthma and a weakness in the abdominal wall, the patient is also obese, the hazard of the formation of hernia is even greater.

That asthma contributes to the formation of hernia is borne out in the present study of 157 patients who had both asthma and hernia and who were examined at the Mayo Clinic in a period of five years, namely, from 1938 to 1942, inclusive. Two hundred and seven hernias of various types were present in these 157 cases of asthma. There were 150 inguinal hernias, twenty-five postoperative hernias, seventeen umbilical hernias, nine diaphragmatic hernias, four femoral hernias and two epigastric hernias.

Hernias were present in 2.3 to 2.8 per cent of the patients who registered at the clinic in the years 1938 to 1942, inclusive. During this same period, 3.4 per cent of patients with asthma had hernias.

Asthma contributes not only to the formation of hernias, but also to their recurrence after surgical repair. This can be exemplified by two groups of cases, each of which is to be found in the large group of 157 patients who had both asthma and hernia. One group consisted of twenty-three patients with asthma who on admission were found to have had a recurrence of their hernias which had been primarily repaired before their coming to the clinic. The other group comprised twenty-two patients whose hernias were primarily repaired at the clinic. In six (27 per cent) of these twenty-two cases the hernias recurred in from one month to three years after operation. In the first of

the six cases, the patient who had had a post-operative hernia repaired in 1940, reported a slight "swelling" present in the incision but she did not think that this was a recurrence of her hernia. She has not returned for observation but this "swelling" has been tentatively classified as a recurrent hernia. In the second case, a post-operative ventral hernia recurred when the patient lifted her husband. In the third case, in which the patient was a man, aged sixty-three years, who underwent a fascial repair of an inguinal hernia, the hernia recurred one year after operation. In the fourth case, in which a diaphragmatic hernia was repaired, roentgenologic examination disclosed a recurrence three years later. A small amount of stomach was present in the esophageal hiatus, but the patient did not have any symptoms. Her asthma had been active at times each year. The fifth patient observed a small bulge in his incision two years after repair of a recurrent inguinal hernia on the right side. In the sixth case, the patient, who was a trainman, had a recurrence of a left scrotal hernia when he alighted from a train. The immediate postoperative course was uneventful in all but one of the twenty-two cases. In this case, massive collapse of the lung developed but the patient recovered completely. We do not mean to imply that all recurrences of hernia in cases of asthma can be attributable to asthma alone, but asthma probably was a contributing factor in some of these cases at least.

In contrast to the recurrence rate of 27 per cent in repairing hernias in our small group of twenty-two patients who had both asthma and hernia, Guthrie, Olson and Masson reported that hernia recurred in 6.4 per cent of 2,298 cases in which hernias of all types were repaired at the Mayo Clinic.

It is recognized that asthma increases the risk of certain types of surgical procedures but in many instances operation may be undertaken with reasonable safety when patients are properly prepared. Usually, there is no urgency about repairing a hernia and the operation can be safely postponed until the asthma has been brought under control. In this group of 157 cases of asthma, 109 patients either were not advised to have their hernias repaired at the time they were seen at the clinic or were frankly advised not to have them repaired. There were fifty-one patients

*(Continued on Page 770)*

# CLINICAL-PATHOLOGICAL CONFERENCES

## CHRONIC PEPTIC ULCER OF THE ESOPHAGUS

W. A. COVENTRY, M.D., and ARTHUR H. WELLS, M.D.

Duluth, Minnesota

DR. A. H. WELLS: Chronic peptic ulcer of the esophagus is made possible by an abnormal entrance of hydrochloric acid into the lower end of the esophagus, generally as the result of an associated congenitally short esophagus with partial thoracic stomach, or less frequently as the result of heterotopic acid secreting gastric glands in the esophagus, chronic recurrent vomiting, pyloric stenosis, or an abnormal laxity of the cardia. A frequent co-existence of gastric or duodenal ulcer, hyperacidity, and the possibility of an ulcer diaphysis is to be noted. The histopathology has many of the characteristics of "peptic" ulcers in the stomach, duodenum, jejunum or Meckel's diverticulum. Frequently, the clinical manifestations of a deep-seated, substernal burning pain following the ingestion of food, acid eructations and dysphagia are characteristic of the disease. Although it is primarily a disease of adults it has been described in children. Sex is not important. The complications of hemorrhage, cicatricial stenosis, perforation, and carcinoma are repeatedly recorded. Early in the disease the symptoms are immediately relieved by the use of alkalis. Spontaneous healing is frequent and recurrence common. The diagnosis is established by x-ray studies, esophagoscopy and biopsy.

We will report a case of this rare disease process, and then review the essential features of the subject in the discussion.

### Case Report

DR. W. A. COVENTRY: This elderly, seventy-eight-year-old housewife came to Duluth on repeated occasions from her home in the Twin Cities for medical care. Her chief complaints were constantly those of pain in the right upper quadrant and in the epigastrium. Her first admission to this hospital was on July 13, 1938, six years before her death, at which time she complained of right upper quadrant discomfort of eight years' duration, becoming more severe during the past four or five years. This discomfort was characterized by gnawing pains coming on about three hours after meals. When most severe, the pain radiated to the right scapular area. The pain seemed to be precipitated by the ingestion of fatty foods and was relieved by taking other foods. An x-ray examination two years previously had revealed a cholelithiasis. She was, incidentally, having some arthritic pains in her knees and was showing some evidence of senile cerebral changes. She returned on July 17, 1941, after considerable medical care elsewhere. On this occasion it is interesting to

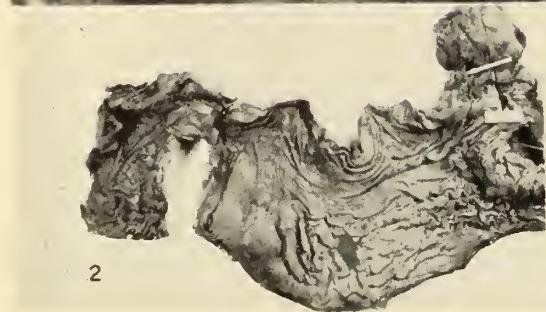
note that her pain had definitely shifted to the xiphoid. She had lost some forty pounds in weight, which may or may not have been accounted for by a fat-free diet which she was following. There was almost daily vomiting during this period of hospitalization, sometimes as much as 500 c.c. of fluid. The emesis was frequently clear and watery, at times coffee-groundlike and on repeated occasions, contained large amounts of hydrochloric acid. She was particularly distressed by the ingestion of orange juice and fats. She also objected to a great variety of foods without apparent logic as to a relationship to any possible disease process. She felt that her digestive troubles were entirely on the basis of her gall stones and wanted them removed. Her red blood cell sedimentation rate was 27 mm. in one hour (Cutler Method). There was a low-grade anemia with 3,100,000 red blood cells and 9.75 grams of hemoglobin. There was a normal specific gravity of urine specimens and an occasional finding of a few pus cells in the urine. The white blood cell count was continuously normal or only slightly elevated. Icterus index was 6. There was from 2 to 4 plus occult blood in stool specimens. On one occasion the blood urea was 32 mg. per cent, and a week later it was 17.6 mgs. per cent. Her temperature was generally normal, but occasionally rose to 100° F. It was felt that she was suffering primarily from pylorospasm, or stenosis of the pyloric valve, resulting from her duodenal ulcers and was treated toward that end with some improvement in her general condition and a slight gain in weight.

Her last admission was on June 25, 1943, almost one year before her death. She was now considerably enfeebled by age and her disease process. It was learned from her daughter that she had lost from 165 pounds to 90 pounds in weight during the preceding three years. Her loss of weight had been insidious throughout the period in spite of a great variation of diet. It was explained that there had been a recurrence of the epigastric pains following the ingestion of foods, particularly lettuce, roughage, greasy foods, and eggs. Her symptoms had become particularly severe during the few weeks prior to admission. There had been associated frequent vomiting. The patient was very tired, listless, and weak. At times her pain lasted all night, and she had little rest. She would, on occasions, eat her meals reluctantly. During the year of hospitalization there were short periods of considerable improvement. There were repeated tests showing 3 and 4 plus occult blood in the stool and in the emesis. Her red blood cell count had fallen in two weeks from 4,000,000 to 1,900,000 and was frequently found to be

From the Department of Pathology, St. Luke's Hospital, Duluth, Minnesota.



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Fig. 1. Deformed duodenal cap with niche and a duodenal diverticulum.

Fig. 2. Pyloric stenosis, duodenal ulcer, duodenal diverticulum, esophageal ulcer with perforation (probe) and a diverticulum of the fundus of the stomach.

below 3,000,000 in spite of anti-anemic therapeutic measures. A high degree of pyloric obstruction was demonstrated by x-ray at the time of admission.

One month before her death a cholecystotomy was performed in the hopes of improving her digestive disturbances. After a brief period of improvement following the operation, she again became extremely weak, restless, nauseated, and had cold, clammy skin, involuntary urination and defecation, and recurring Cheyne-Stokes respiration. Her abdomen remained soft, and excepting for a single spike of fever reaching 100.8° F. five days before her death, her temperature remained normal or subnormal.

#### X-ray

DR. A. L. ABRAHAM: You will see (Fig. 1) a markedly deformed duodenal cap, a diverticulum in the second portion of the duodenum, and gall stones in the gall-bladder area. There was considerable retention of barium in the stomach due to severe obstruction at the pyloric valve. Fluoroscopic examination revealed no significant changes in the esophagus. It appeared to be in its normal position and entered the stomach at the usual sharp angle. The patient was in such poor condition that there was no possibility of a proper exami-

nation of the esophagus by varying the patient's position on the examining table. In a second, later, flat plate of the abdomen, you will see that the gall stones shifted from the right upper quadrant to the left upper quadrant, decidedly to the left of the midline. I am wondering if there is some explanation for this in the post-mortem examination?

#### Autopsy

DR. A. H. WELLS: The important disease processes present include a duodenal ulcer with pyloric stenosis and an esophageal ulcer with rupture and general peritonitis. The active duodenal ulcer was in the first centimeter beyond the pyloric valve, associated with extensive scarring of the first three centimeters of the duodenum, and a constriction of the pyloric valve to an opening measuring about 1.5 cm. in diameter. This opening was rigid due to the dense scar tissue about its circumference (Fig. 2). There was also an extensive ulceration of the lower 10 cm. of the esophagus with a great deal of distortion of its shape (Figs. 2 and 3). The cardia cannot be identified with certainty. In the picture one can see a probe extending through an ulcer which is perforated into the peritoneal cavity. This ulcer is 2 cm. above the apparent cardia. All of the

esophagus seen in the picture has an ulcerated surface. The ulceration has extended through the muscularis in an area of about 1 x 3 cm. adjacent to the cardia and is sealed by fibrous and fatty tissue along the dorsal wall of the esophagus. The lower end of the esophagus was held rigidly in position by numerous old adhesions between it and the adjacent diaphragm, liver and spine. Histologically, there was extensive fibrous scarring with almost complete obliteration of the muscularis in the entire lower end of the esophagus with moderate, patchy, lymphocytic infiltration and severe neutrophilic infiltration of the thin, necrotic, surface area. The upper esophagus did not reveal gastric glands. There was acute generalized peritonitis of a moderate grade of severity which undoubtedly was the terminal manifestation in this emaciated, elderly, woman.

Incidental findings included a calculus somewhat less than 1 cm. in diameter, in the lower end of the mildly dilated common duct. The gall bladder was huge and had remarkably thick walls with many old fibrous adhesions. The explanation for Dr. Abraham's perplexing problem of shifting gall stones from one side of the abdomen to the other must be on the basis of the remarkable elongation and dilatation of the gall bladder which could allow the stones to be to the left of the midline on one occasion and to the right on another depending on what part of the gall bladder they occupied. There was a large, noninfected diverticulum (Fig. 2) in the fundus of the stomach and another in the second portion of the duodenum. A third diverticulum in the sigmoid had ruptured and had a 3 cm. in diameter abscess walled off against the lateral pelvic wall. Retroperitoneal lymphnodes were mildly involved with a caseating, tuberculous process.

### Discussion

It is considered most likely that this patient's esophageal ulceration began at about the time of the shifting of her pains from the right upper quadrant to the xiphoid region and after considerable pyloric stenosis had developed. Whether this was due to a change in the mechanical forces at the cardia or the repeated vomiting of acid-containing material is a question. In retrospect this patient's clinical features should have strongly suggested chronic ulceration of the esophagus. Esophagoscopy and biopsy were indicated since with the proper therapy for this type of peptic ulcer improvement is to be expected.

### Symptomatology

A detailed study of the pain of esophageal ulcer as to type, location, radiation, duration, relation to various foods, recumbence, abdominal pressure, and therapeutic responses are so essential to the clinical diagnosis of this disease, that I wish to briefly review impressions gained from the literature. The pain may be severe, trivial, or absent. During the early stages it generally occurs in attacks, separated by normal periods, as in gastric or duodenal ulcer. The attacks may increase in severity and duration. It is most often described as a burning or smarting (heartburn). Less often it is described as a fullness, distention or constriction. Its most common location is in the lower substernal area

or in the high epigastrium. Occasionally, it is precordial in location. In the more severe cases it may radiate to between the shoulder blades, left side of the neck, jaw, cheek or ear and even down the left arm, simulating the pain of angina pectoris. In some cases it is described as occurring at the onset of a meal with the first passage of food down the esophagus. It may or may not then be felt throughout the remainder of the meal. In other cases it has occurred anywhere from a half to three or four hours after the meal. Early in the disease process, coarse, hard foods or foods insufficiently chewed are painful. Later, many types of foods excite pain. Alcohol, condiments, and hot foods may be refused. Exercise causing pressure on the stomach, such as bending forward, after a meal, will reproduce the pain. Some patients find that it recurs after lying down during the day or at night. The pain may not be felt when lying supine but will immediately develop when in a prone position. Swallowing while lying down is an effective way of reproducing the pain. Anti-spasmodics, such as the atropine group and alkalis, as well as some foods, particularly milk, generally bring quick relief. A reflex protective spasm apparently initiates pain when food or other irritants are being swallowed, and a reflex of hydrochloric acid is the obvious irritant when pain results from leaning forward or lying down. The difficulty of belching gas from the stomach into the esophagus (*aerogastriebloqué*) due to spasm or stricture has been an aggravating complication. Pain may be so severe as to cause a serious psychosis, in which the patient refuses food to the point of extreme inanition. I am seriously wondering whether our patient may not have become emaciated because of the fear of swallowing. We do not have an exacting study of her pain.

Dysphagia is generally considered to be a late manifestation of esophageal ulceration. Early in the disease the patient may notice a momentary hesitation of food in the lower esophagus due to spasm. Definite difficulty in the passage of food through the esophagus with regurgitation of undigested food develops with the occurrence of cicatricial contraction. Once developed, dysphagia is of great diagnostic importance and should always lead to a proper localization of a lesion. Acid regurgitation, particularly while recumbent and especially when in the prone position or on the right side or when bending forward, should suggest the possibility of esophageal ulceration. Effortless vomiting of food from the lower portion of the esophagus containing hydrochloric acid is at first probably the result of protective spasm and later due to cicatricial stenosis. Bleeding from the ulcer may be in the form of hematemesis, vomiting coffee-groundlike material, melena, occult blood in the stool or sudden exsanguination. Moderate anemia is common. There may be tenderness along the sternum, particularly at its lower end. A reproduction of the pain is sometimes possible in the doctor's office, by placing the patient in a prone position, feet higher than head and compressing the abdomen. In the differential diagnosis one must exclude duodenal and gastric ulcer, carcinoma of the esophagus, cardiospasm, diaphragmatic hernia, and coronary sclerosis.

DR. P. G. BOMAN: I should like to show the x-ray pictures (Figs. 4 and 5) of a case which is fairly representative of the most common cause of esophageal ulcer, that is, a congenitally short esophagus with partial

sulting from malignancy, syphilis, tuberculosis, foreign bodies, corrosive chemicals, varicosities, thrush, severe burns, fungi, uremia, leukemia, acute esophagitis, diabetes mellitus, pernicious anemia, pellagra, congenital

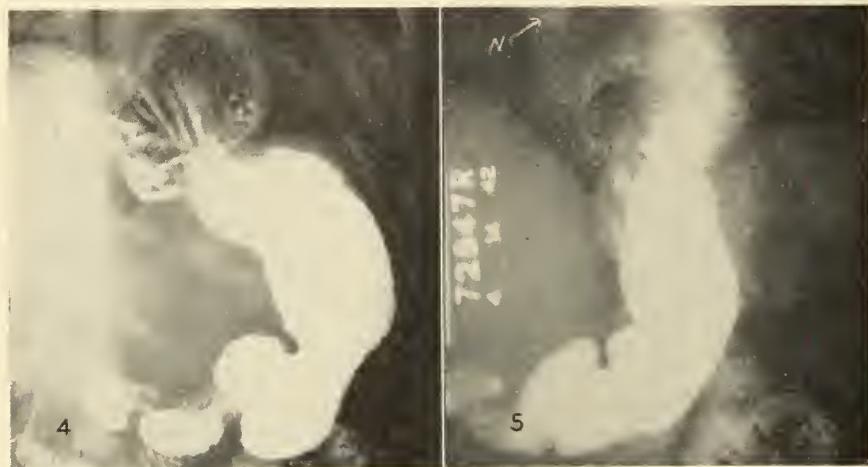


Fig. 4. Short esophagus and thoracic stomach. See continuous gastric mucosal pattern in the "hernia."

Fig. 5. Same as Figure 4 with visualized niche (N) in lower esophagus.

thoracic stomach. This patient came to us at the age of sixty-four with periods of weakness, exhaustion, and nervousness. She also complained of heartburn when lying down. Subsequently she developed nausea, bloating, belching, and pain in the lower sternal region. On one occasion she had a gross hemorrhage with tarry stools. Her red count at that time was 2,970,000 and her hemoglobin was 55 per cent. We have been treating her with frequent feedings, alkali, and iron with an amelioration of symptoms and a rise in her red blood cell count to 4,170,000 with 68 per cent hemoglobin.

The roentgenograms (Figs. 4 and 5) are typical of a congenitally short esophagus with partial thoracic stomach. The coarse, wavy lines identify the mucosal pattern of the thoracic stomach beyond question even in those cases where it might otherwise be confused with a dilated esophagus. The esophageal lines are fine and long. One can generally see the constriction in the esophageal portion due to spasms of musculature just above the esophageal ulcer. There may be a slight dilatation of the esophagus above this point. The next constriction is the cardia which occurs just above the dilated gastric shadow. Demonstration of the niche is frequently very difficult and sometimes impossible without esophagoscopy. Prone position with the feet higher than the head may reveal regurgitation of the opaque meal back into the thoracic stomach and possibly into the esophagus where the ulcer may be visualized.

#### Pathology

DR. A. H. WELLS: I have found only two peptic ulcers in the esophagus in over 2,500 autopsies performed in this hospital during the last ten years. It is absolutely essential to differentiate this ulcer from a variety of other lesions of the esophagus including ulcers re-

narrowing of the esophagus, and cardiospasm. Spasm of the cardia is not an etiological factor in this disease process. I have seen multiple small ulcers with chronic esophagitis in a long-standing, severe case of cardiospasm or achalasia of cardia. However, these should probably be separated from peptic ulcers of the esophagus. Lyall describes two types of ulcers: (1) A diffuse superficial inflammation which may show different parts healing or deep extension; (2) A circumscribed chronic ulceration. The lower margin of the ulceration is generally 1 cm. from the cardia and the upper margin may extend from 2 to 10 cm. up the esophagus. The lesion may involve the entire circumference of the esophagus as it did in our case. The acute and chronic inflammatory reaction, superficial necrosis, the degree of fibrous scarring and the various complications of hemorrhage, stenosis, perforation and carcinoma are the same as found in other peptic ulcers.

#### Treatment

DR. W. A. COVENTRY: The therapy described by Estig and Hurst is the product of a reasonable experience in this rare condition and sounds like good logic. They describe two types of treatment dependent upon the existing etiologic factors in the individual case. If there is a partial thoracic stomach they advise a small number of large meals, fluid or semifluid foods, olive oil preceding meals and 4 ounces of water five minutes after meals. The patient must sit up during the day and the head of the bed is raised at night. Vitamins and atropine sulphate are given. If the ulceration is due to ectopic gastric mucosa then the treatment is similar to that for gastric or duodenal ulcer with frequent small meals and repeated alkalis. The teeth are corrected for proper mastication and oral hygiene corrected. Gastrostomy is

indicated after two months of unsuccessful medical therapy for then they feel that a cicatricial stenosis has developed. Most authors use alkali in conjunction with local application of 10 per cent silver nitrate. In selected cases a subtotal gastric resection would undoubtedly be indicated for esophageal ulcer.

### Bibliography

- Allison, P. R., Johnstone, A. S., and Royce, G. B.: Short esophagus with simple peptic ulceration. *J. of Thoracic Surg.*, 12:432-457, (June) 1943.
- Bartells, E. C.: Acute ulcerative esophagitis. *Arch. Path.*, 20:369-378, (Sept.) 1935.
- Bloch, Leon: Acute ulcerative esophagitis. *Am. J. Digest Dis.*, 12:407-410, (Oct.) 1940.
- Bull, P. N.: So-called idiopathic dilatation of esophagus. *Ann. Surg.*, 81:59, 1925.
- Butt, H. R., and Vinson, P. P.: Esophagitis: II. A pathological and clinical study. *Arch. Otolaryng.*, 23:550-572, (May) 1936.
- Byrd, C. E.: Recent advances in surgery of the esophagus. *Surgery*, 6:796, (Nov.) 1939.
- Caplan, S. B., and Zwaifler, Nathan: Peptic ulcer of the esophagus. *Rev. Gastroenterol.*, 9:108-112, (March) 1942.
- Chamberlin, D. T.: Peptic ulcer of the esophagus. *Am. J. Dig. Dis.*, 5:725-730, (Jan.) 1939.
- Chamberlin, D. T.: Peptic ulcer of the esophagus. *Lahey Clinic Bull.*, 2:59-63, (Oct.) 1940.
- Cleaver, E. E.: Chronic peptic ulceration of the esophagus. *Am. J. Digest. Dis.*, 10:319-329, (Sept.) 1943.
- Elkeles, A.: A case of the plummer-vinson syndrome with radiologically demonstrable peptic ulcer of the esophagus. *Brit. J. Radiol.*, 15:122-123, (April) 1942.
- Estig, R. C., and Hurst, Arthur: Chronic peptic ulcer of the esophagus and its association with congenitally short esophagus and diaphragmatic hernia. *Quart. J. Med.*, 11:105, (April) 1942.
- Feldmen, Maurice: Peptic ulcer of lower esophagus associated with esophageal hiatus hernia. *Am. J. M. Sc.*, 198: 165-166, (Aug.) 1939.
- Fischer, G. E.: The esophageal manifestations of pellagra. *South. M. J.*, 37:444-448, (Aug.) 1944.
- Harrison, Tinsley R.: Clinical aspects of pain in the chest. II. Pain arising from the esophagus. *Am. J. M. Sc.*, 209: 765, (June) 1945.
- Hurst, A. F.: Chronic peptic ulcer of esophagus. *Guy's Hosp. Rep.*, No. 4, 89:482-487, 1939.
- Jackson, C., Cutler, G., Clerk, L. H., Lucans, R. M., and Smoor, W. F. F.: Hematemesis. *J.A.M.A.*, 85:870-874, (Sept.) 1925.
- Johnstone, A. S.: Peptic ulceration of the esophagus with partial thoracic stomach. *Brit. J. Radiol.*, 16:357-361, (Dec.) 1943.
- Lust, F. J., Peskin, A. R.: Roentgenologic diagnosis of peptic ulcer of the esophagus. *Am. J. Roentgenol.*, 52:40-45, (July) 1944.
- Lyall, A.: Chronic peptic ulcer of the esophagus, report of eight cases. *Brit. J. Surg.*, 24:534, 1937.
- Mallory, T. B.: Case report of the Massachusetts General Hospital. Perforated peptic ulcer of the esophagus. *New England J. Med.*, 222:232-233, (Feb. 8) 1940.
- McIlwain, W. L., Young, C. H., and Feder, J. M.: Rupture of varicose ulcer of esophagus. *J. South Carolina M. A.*, 37:163-165, (July) 1941.
- McKinley, R.: Diagnostic esophagoscopy in ulceration. *Arch. Otolaryng.*, 5:238-243, (Mar.) 1927.
- Pierce, John, and Dagradi, Angelo: Acute ulceration of the esophagus with associated intranuclear inclusion bodies. Report of 2 cases. *Arch. Path.*, 35:889-897, (June) 1943.
- Penner, A., and Bernheim, A. I.: Acute postoperative esophageal, gastric and duodenal ulceration. *Arch. Path.*, 28:129-140, (Aug.) 1939.
- Rankin, L. M.: Perforated ulcer of esophagus following a burn. *Am. J. Surg.*, 67:134-136, (Jan.) 1945.
- Vinson, P. P., and Wilder, R. M.: Diffuse ulceration of the esophagus and trachea associated with diabetes mellitus. *Arch. Int. Med.*, 52:541-544, (Oct.) 1933.

### A CASE FOR DIAGNOSIS

PAUL LOBER, M.D., and A. J. HERTZOG, M.D.

Minneapolis, Minnesota

DR. HERTZOG: Today we shall present a case of interest for clinical diagnosis. Dr. Lober will give the history.

DR. PAUL LOBER: The case is that of a sixty-eight-year-old white housewife, who suddenly experienced a severe, constricting pain in the chest one week before her admission to the hospital. This pain was very severe and radiated to both shoulders and down the left arm. She became nauseated, and vomited several times. She also noted some shortness of breath. A private physician was called who told her she had had a heart attack and gave her some medicine which partially relieved her pain. During the week the pain improved, but she continued to be nauseated. On the day of admission she was unable to keep anything on her stomach and complained of great weakness and shortness of breath.

DR. HERTZOG: Note that she came in the hospital one week after she first became ill. She had improved and then became worse.

DR. LOBER: This patient had previously been in good health except for occasional constricting pains in the chest on exertion. One year previously she had been

thoroughly examined by a private physician, who told her she had some coronary sclerosis, but otherwise was in good condition.

On admission, physical examination revealed a fairly well developed and nourished white female, who was in acute distress, with rapid and labored breathing. She was very pale, covered with a cold sweat, and was only semi-conscious. The blood pressure was 90/60, pulse was 107 per minute, and her temperature was 97.6 degrees rectally. Examination of the chest showed normal breath sounds with no râles. There was normal resonance to percussion. Respirations were 26 per minute. On auscultation of the heart, a loud, rough systolic murmur was heard over the entire precordium. It was heard best in the third and fourth interspaces to the left of the sternum and was also well heard at the apex. There was a precordial pulsation and a systolic thrill palpable in the same region. The heart rhythm was regular. There were no other physical findings of note.

PHYSICIAN: Was this thrill very marked?

DR. LOBER: The thrill was very easily felt by all the members of the staff who examined her. There is no doubt that this was a definite systolic thrill. The patient was treated with morphine and atropine for pain and restlessness. She was given oxygen continuously by mask, and was digitalized intravenously and given

From the Minneapolis General Hospital, Minneapolis, Minnesota, A. J. Hertzog, M.D., Pathologist.

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aminophyllin. Two hours after admission the blood pressure dropped to 68 mm. systolic and the diastolic could not be obtained. She was given a small amount of adrenalin but it had no effect on her blood pressure.

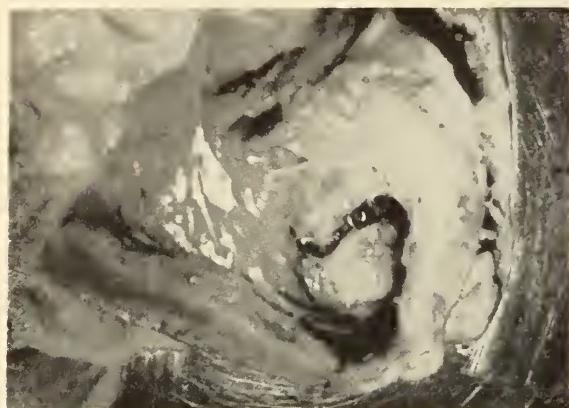


Fig. 1. Interventricular septum of heart, showing perforated infarct.

She died eleven hours after admission. An electrocardiogram was taken which showed a low QRS complex and a large Q<sub>3</sub>.

DR. HERTZOG: We have, then, a patient who had a typical story of a coronary attack one week before admission, and then developed a systolic murmur and thrill at the apex of the heart.

DR. CANFIELD: It was not at the apex, it was at the third and fourth interspaces, just to the left of the sternum.

DR. HERTZOG: The common thing following a myocardial infarction would be a friction rub, which was not heard in this case.

STUDENT: How do we know that this murmur was not present previously, due, for instance, to a congenital septal defect?

DR. CANFIELD: She was examined by a capable internist one year ago who found nothing but evidence of coronary sclerosis. He would certainly have picked up this murmur.

STUDENT: Could one get a thrill with aneurysm of the heart?

DR. BRENNER: I cannot see a mechanism for it. The heart cannot dilate quickly more than 8 to 10 mm. because of the pericardial sac, which stretches under strain very slowly. It takes up to forty-eight hours before you get a demonstrable enlargement of the cardiac silhouette. This is based on the work done with dogs.

DR. HERTZOG: I understand that the resident physician made the diagnosis in this case. Can you tell us how you arrived at your conclusions?

DR. CANFIELD: It was simple and rather obvious. She had a history of coronary thrombosis and examination showed the findings that go with a congenital interventricular septal defect. From previous examination we know she did not have a congenital lesion, so that we were forced to the conclusion that this defect must have been produced by rupture of the infarcted interventricular septum.

DR. HERTZOG: We have, then, a clinical diagnosis of interventricular septal defect due to rupture of the septum. Dr. Lober will give you the findings at autopsy.

### Autopsy Findings

DR. LOBER: At postmortem, the heart weighed 390 grams. The valves and chorda tendinae had a normal appearance. There was severe sclerosis with complete occlusion of the midportion of the anterior descending branch of the left coronary artery. The right coronary artery showed 90 per cent narrowing of the proximal portion, and the left circumflex showed up to 90 per cent closure at its proximal and midportions. The myocardium showed an area of recent infarction involving the lower part of the septum between the right and left ventricles. Here the wall was thin and bled about 1.5 centimeters into the right ventricle. Careful removal of a postmortem clot in this region revealed a perforation through the septum in the central part of the infarct measuring about 1 cm. in diameter. The lungs showed a minimal degree of edema and the liver showed evidence of chronic passive congestion. The remainder of the examination revealed nothing of note.

DR. HERTZOG: Here we have a photograph of the heart taken immediately after removal showing the hemorrhagic infarct of the interventricular septum and the area of perforation (Fig. 1). The hole is rather ragged, and at the time the heart was beating, it was larger than it now appears.

PHYSICIAN: Can you tell how many days have elapsed since the infarction?

DR. HERTZOG: You can be sure it is not less than three to five days. The wall is probably weakest at eight or ten days. These infarcts occasionally rupture, and the common place is into the pericardial sac. An infarct that ruptures and produces an interventricular septal defect is a relative curiosity. This is the first case we have seen around here. Sager<sup>5</sup> reports that only 3 per cent of ruptured myocardium occur through the interventricular septum.

DR. LOBER: Coronary thrombosis with perforation of the interventricular septum is a rare pathological entity which has only recently been recognized clinically before death. The first case in the literature was reported by Latham in 1845.<sup>2</sup> Cases were reported again in 1850, 1884, 1876, 1906 and 1921. Coronary thrombosis was not found in all of these, but the descriptions of the specimens fit an infarction with softening and degeneration of the myocardium, and finally perfora-

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tion of the septum. In 1923 Brunn reported two cases, the second of which was the first case to be diagnosed clinically before death. Until 1934 only seventeen cases had been reported, and up to 1943 only thirty-six. Together with Master's case<sup>3</sup> in 1944, our case brings the total to about thirty-nine. Of these, only nine have been diagnosed before death.

In reporting the frequency of septal perforation from coronary thrombosis, other causes of perforation must be excluded. These include trauma, abscesses, parasitic cysts, congenital defects, congenital aneurysms, and ulcerations of bacterial endocarditis.

The clinical history of most of these patients is that of experiencing a sudden severe constricting pain in the chest, accompanied by signs of shock, as seen in any coronary occlusion. This is followed in a few days by the appearance of a loud, rough systolic murmur and thrill which had not been present previously. This is heard best in the fourth interspace to the left of the sternum and is transmitted to the axilla. According to Edmondson<sup>1</sup>, the average time of rupture is about seven days following the acute infarction, and 78 per cent occur between the third and twelfth days. Usually the exact time of rupture is unnoticed and the murmur is only found incidentally as the patient's condition grows worse. Apparently there are no immediate symptoms associated with this perforation as there are with perforation into the pericardial sac. If the patient survives the acute stage, there always appears a high grade right-sided congestive heart failure with edema, ascites, and engorgement of the liver. Usually this is very resistive to treatment. In most cases, death occurs in the first few days from acute heart failure and circulatory shock. If the patient survives the acute episode, death is inevitable from right heart failure. Until 1934, no case had lived more than ten days following perforation. By 1942, four cases had survived more than one month. In December of that year, Wood<sup>6</sup> reported a case which survived four years and ten months.

Diagnosis is said to be quite simple if the possibility is considered. A previous congenital defect or a rupture of a papillary muscle may produce a similar murmur. The murmur may be absent if there is marked depression of circulation. The appearance of severe right heart failure soon after supports the diagnosis and helps exclude the other possibilities. Confirmation of the diagnosis may be obtained from the appearance of a right axis deviation in the electrocardiogram. In only three cases was there a report of an interventricular conduction defect, however, which is fairly

common in the congenital variety. In two cases, where the defect was greater than 2 cm. in diameter, diastolic murmurs were reported. As a rule, the smaller the opening, the louder the murmur. In rupture of the papillary muscle, the heart is widened, the diastolic murmur is more common, and the murmurs heard are more bizarre than in these cases.

The typical picture at postmortem examination is much like that seen in our case. Usually both coronary arteries are narrowed, and one is occluded. This is most often the anterior descending branch of the left. Only six cases have been reported of a posterior occlusion. There is almost always a bulging of the infarcted septum into the right ventricle with the perforation at the center. The area of softening is usually near the apex and anteriorly. The openings are frequently multiple, as many as four having been reported, and they are usually small, but have been reported up to 3 cm. in diameter. The edges of the perforation are usually very soft and friable, but may show organization if it is old. It has been noted<sup>4</sup> that there are often plaques of atherosclerosis formed on the wall of the right ventricle opposite the opening, where the stream of blood from the perforation strikes in patients who survive some length of time.

In conclusion, then, this is an unusual pathological occurrence, which should be easily recognized clinically if the possibility is considered, and is probably not as uncommon as is generally thought. The prognosis is very poor, and about all that can be done in prevention is to keep the patient who has had a myocardial infarction at complete rest.

*Anatomical Diagnosis:* (1) Coronary sclerosis with thrombosis; (2) recent myocardial infarct with interventricular perforation; (3) passive congestion of liver.

### References

1. Edmondson, H. A., and Hoxie, H. J.: Hypertension and cardiac rupture; clinical and pathological study of seventy-two cases, in thirteen of which rupture of the interventricular septum occurred. *Am. Heart J.*, 24:719-733, (Dec.) 1942.
2. Latham, P. M.: Quoted by Sager.
3. Master, A. M., and Russel, T. B.: Acute coronary artery occlusion with interventricular septal perforation, Bernheim's syndrome, and superior vena cava obstruction; diagnosed clinically. *Ann. Int. Med.*, 22:440-447, (Mar.) 1945.
4. Moolten, S. E.: Prolonged survival after perforation of infarcted interventricular septum in coronary arterial disease. *Arch. Int. Med.*, 69:108-116, (Jan.) 1942.
5. Sager, R. V.: Coronary thrombosis with perforation of infarcted interventricular septum. *Arch. Int. Med.*, 53:140, 1934.
6. Wood, F. C., and Livezey, M. M.: Five years survival after perforation of interventricular septum caused by coronary occlusion. *Am. Heart J.*, 24:807-815, (Dec.) 1942.

### COURSE IN DISEASES OF PACIFIC AREA GIVEN AT CARLISLE BARRACKS

Selected medical officers being redeployed to the Pacific areas are attending a two-week course in diseases of the Pacific area given at the Medical Field Service School, Carlisle Barracks, Pennsylvania. The purpose of the course is to acquaint them with special problems in the prevention and treatment of diseases peculiar to the Pacific area. Officers with service in the Pacific are

used as instructors in the course and bring to the student officers the benefit of their experience. Emphasis in instruction is placed upon the prevention of disease, and includes practical measures in control of typhus, malaria, schistosomiasis, dengue, filariasis, plague, cholera and other diseases commonly met in areas of the Pacific where American troops are serving.

## HISTORY OF MEDICINE IN MINNESOTA

### NOTES ON THE HISTORY OF MEDICINE IN HOUSTON COUNTY PRIOR TO 1900

By NORA H. GUTHREY†  
Mayo Clinic  
Rochester, Minnesota

(Continued from the August Issue)

*Spring Grove Township*, bounded on the south by Iowa, has a diverse surface of valleys, hills and table lands. On these high lands, among open groves of oak, maple and walnut, bubbled many clear and sparkling springs, and it was from one such place of stately trees and crystal water that Spring Grove Village, and presently Spring Grove Township, took its name. More populous than the three other western divisions because, like Caledonia Township, it lay in a direct path of westward immigration, the township attracted as permanent settlers many who had planned to go further, and among these were a group of substantial young farmers from Norway who settled in the locality known as Norwegian Ridge. The village of Spring Grove, founded in 1853, became an important stopping place for travelers between Brownsville and Preston. The settlement and community grew, farms and industries developed, roads were established and improved and, finally, the narrow gauge railroad extended its line into the township. With achievement of status as railroad points, Spring Grove and Newhouse, the latter named for an esteemed local family, were newly important. Riceford, well situated in the northwestern corner of the township, on Riceford Creek near its junction with the South Fork of the Root River, although less fortunate commercially than these two villages, nevertheless was as happily named. In 1856 the Honorable H. M. Rice, of St. Paul, who was visiting western Houston County (probably in the course of the same visit during which he befriended a settler in La Crescent Township) one day when following an Indian trail, forded the river about twenty rods from the Crystal Flouring Mill, and because of this incident the settlement became Riceford, and the nearby stream, Riceford Creek.

Into this township of varied scenery and resources, of substantial permanent settlers and, for many years, countless travelers, there came inevitably practitioners of medicine of various types. There is record of an early druggist and perhaps medical practitioner, Ellingbraaten Helgeson Bjorn, who had come to America in 1855 and who settled near the village of Spring Grove in 1859. A little later Dr. Ingvold [sic] Muller, pharmacist and physician, is said to have practiced medicine in the township, and Elling Rierson, a pharmacist, for a few years after 1875 was in partnership with Dr. Thore E. Jensen before taking over the business alone. Dr. Jensen, in Spring Grove since his boyhood, returned there from medical school in 1874 and there remained. Late in the seventies Dr. George Nye, previously in Caledonia, practiced in Spring Grove and there is evidence that Dr. Edward MacDonald in that period registered in

Houston County as a resident of Spring Grove, although it appears that he soon removed to New Albin, Iowa. A native son of Spring Grove Township, Dr. Christen K. Onsgard, practiced medicine in Spring Grove Village and the community for five years, from 1887 to 1893, before going on to Rushford, Fillmore County, and other localities; and Dr. Andreas P. Lommen, another native of Spring Grove Township, was certificated as a physician in Houston County in 1895, although Mabel, Fillmore County, a few miles west, was the first official scene of his medical practice, beginning in that year. In a story of medicine in Fillmore County full comment will be made on the careers of Drs. Onsgard and Lommen. Last to enter the township before the beginning of the new century was Dr. Trond Neilson Stabo, from Norway, who after a few years removed to Decorah, Iowa.

Thus, there were in Houston County over a period of almost fifty years the nearly seventy physicians who have been named here and probably others of whom record has not been available. All of these men lived in close sympathy with their fellow residents, of the same hopes and fears, aims and ambitions, manners and customs, aiding them in times of illness and stress, working with them and for them at all times for better and fuller community life.

### **Establishment of Medical Association**

The basic reason for establishment of medical associations, as for other associations of public service, was the need, brought about by increase in the population and a corresponding increase in the incidence of disease, for organization and co-operation among medical practitioners, whose number also fortunately had increased, and for extension of their usefulness.

Some of the early practitioners of medicine came directly from medical schools; others were less fortunate in their professional grounding, but most of them were men of integrity in civil and in professional life. The conditions of pioneer life afforded little opportunity for exchange of ideas among practitioners and the resultant conditions of medical practice were such that knowledge, long unused, was applied imperfectly or was lost; some physicians perhaps were negligent, consciously or unconsciously. Among the members of the profession there fortunately were men who realized that the needs of a growing population would be great and that the conditions of practice should be improved, and who visualized, furthermore, the advancement of medical science. As the result of the initiative of one man or of a small group of men of this type in given localities, organizational meetings were brought about.

The early encouragement of medical education through medical associations in the state has been so well covered by Eckman and Bigelow in their account of pioneer medical history in Dodge County as to obviate a review in the present notes. It may be said, however, that by the latter half of the nineteenth century Minnesota had a good representation of medical societies, established at greatly different times, beginning with the Minnesota Medical Society (later the Minnesota State Medical Association), organized on July 23, 1853, at Saint Paul, when Minnesota was still a territory. After an apparent lapse, this society was reorganized on February 1, 1869, at Saint Paul, and the first semi-annual meeting was held at Owatonna, Steele County, on June 16, 1869. At this meeting Houston County was represented, for Dr. John B. Le Blond was admitted to the membership. At this session also a report was presented on the number of regular and of irregular practitioners in the state; of the 119 regular practitioners, Houston County had four and of the ninety-three irregular "doctors," it had five.

Discouragement of quacks and irregular practitioners, a movement fostered by the State Medical Association, achieved success through the act to regulate medical practice in the state (the "Diploma Law") of 1883 and through subsequent legislation. A crude law, under which the faculty of the medical department of the University of Minnesota was to organize as a board of examiners, had been passed in 1869 and repealed in 1870. After the passage of the act of 1883, of the 143 physicians in the state who thereby had received exemption certificates on furnishing evidence of having practiced medicine in Minnesota five years prior to the legislation, eight were in Houston County: Drs. J. W. Albee, A. C. Gates, G. L. Gates and W. H. McKenna, of Caledonia; W. W. Bell and J. M. Riley, of Brownsville; and H. B. Train and A. J. Carpenter, of Hokah.

In 1887 the "Diploma Law" of 1883 was repealed and a new medical act came into effect whereby an independent State Board of Medical Examiners was created. By the Affidavit Ruling of 1887 provision was made under which physicians were permitted to continue practice by filing, before 1890, affidavits with the secretary of the State Board of Medical Examiners that they had been engaged in the practice of medicine in Minnesota prior to July 1, 1887. Dr. A. J. Christensen, of Caledonia, and Dr. J. R. Wilson, sometime of Hokah, were two in Houston County who availed themselves of this privilege. Early in 1895 the laws regulating medical practice in Minnesota were amended further.

*The Houston County Medical Society.*—Although the organization of medical clubs and county medical societies began in the fifties and continued increasingly, in many counties, of which Houston County was one, there was not for several decades a formal organization locally of the members of the medical profession. The physicians of Houston County, however, as time went on maintained close touch professionally with one another and also with physicians of other southern counties by attendance at the meetings of the organized groups of neighboring counties; by participation in district societies, notably the Southern Minnesota Medical Association, founded in December, 1880; the Minnesota Valley Medical Association, founded in 1892; and by representation in the Minnesota State Medical Association.

Dr. De Costa Rhines has recalled that Dr. W. E. Browning, who began to practice medicine in Caledonia in 1899, was instrumental in the organization of the Houston County Medical Society about a year later and that the group, once begun, continued its meetings, although at irregular intervals. Dr. O. F. Fischer, of the village of Houston, was a faithful and influential member, active in the society from the time of its inception and for twenty years its secretary. For some years previous to the formation of the county group the names of Houston County physicians had not appeared on the roster of the Minnesota State Medical Association and evidence has not been found that the county society in its earliest period became a component part of the state society.

Although the purpose of these paragraphs is to touch on events prior to 1900, it seems well here to follow the development of the Houston County Medical Society. At a special meeting called at the Court House in Preston, Fillmore County, on May 2, 1904, the Houston County Medical Society and the Fillmore County Medical Society organized and perfected a society of the medical fraternity of the two counties, henceforth to be known as the Houston-Fillmore Medical Society, and to hold quarterly meetings. Dr. W. E. Browning was the temporary chairman and Dr. F. A. Drake, acting secretary. There were present Drs. Browning, A. P. Lommen, W. B. Grinnell, F. A. Gowdy, T. E. Jensen, O. F. Fischer, G. A.

Plummer, G. R. Reay, A. B. Hart, L. K. Onsgard, C. W. Woodruff, J. H. Phillips, G. A. Love and F. A. Drake. Officers were elected as follows: W. E. Browning, President; W. B. Grinnell, Vice President; F. A. Drake, Secretary; L. K. Onsgard, Treasurer, F. A. Gowdy, T. E. Jensen and C. W. Woodruff, Censors, and J. H. Phillips, delegate from the society to the annual meeting of the Minnesota State Medical Association. O. F. Fischer and A. B. Hart comprised the Auditing Committee and A. P. Lommen and F. A. Drake the Program Committee. Soon after the two county society was organized, it received its charter from the Minnesota State Medical Association and in the transactions of 1904 it was included duly as a component part of the state organization.

As a result of increasing mutual professional interest among the physicians of Houston, Fillmore and Olmsted Counties, the Houston-Fillmore County Medical Society merged with the Olmsted County Medical Society at a meeting held in Rochester on November 14, 1932, the group to be known as the Olmsted-Houston-Fillmore County Medical Society. At this meeting it was decided that the members of the former Houston-Fillmore County Medical Society should form a medical club in the two counties in which the present officers would hold over. At a meeting held on July 5, 1933, in Rochester, the Dodge County Medical Society joined with the three county societies, the resulting group to be known as the Olmsted-Houston-Fillmore-Dodge County Medical Society; the charter for the four county society was issued on July 15, 1934.

### Public Health

Although Minnesota from the earliest period of its settlement was considered to have an especially salubrious climate, the settlers suffered from occasional epidemics of disease. Asiatic cholera at intervals from 1853 during two decades caused tragically sudden death and terrorized the settlers, especially those in settlements along the Mississippi River, as mentioned earlier, because in most known instances the disease was brought in by travelers on the river boats. Typhoid fever annually ran its autumnal virulent course. Before the disease was understood and eradicated by the medical profession, its annual outbreak and toll had come to be accepted as unavoidable evils. There were always sporadic outbreaks of smallpox and in 1881, 1882 and 1883 great epidemics of the disease swept the state. Diphtheria, through the decades from 1860 on, presented a serious problem. In 1890 a deadly epidemic of influenza swept over southern Minnesota. In all these onslaughts of disease and periods of anxiety the people of Houston County and their physicians bore their share.

Long before there was a state board of health in Minnesota, the first action toward sanitation, in many villages, it is said, came about because of the fact that hogs were allowed to run loose in the streets. In Wilmington Township, Houston County, action restricting the liberty of swine came as a reversal of the dictum given much earlier by which these animals had been blessed with complete freedom. To recall a matter of record, at the first town meeting in Wilmington (formerly Portland Prairie), held on May 11, 1858, at which Dr. Alexander Batcheller was chairman, it was voted unanimously that hogs should be permitted to run wild. In Hokah, also, the first town meeting was held on May 11, 1858, the day on which many of the older towns in the county were organized (the day on which Minnesota was admitted to the Union), but at this meeting hogs were not regarded with leniency and it was voted that all swine found running at large after May 20 should "be fined \$1 each," and that "a fence four and a half feet high and with not less than four rails, not over eighteen inches from the ground, shall be a legal fence."

## HISTORY OF MEDICINE IN MINNESOTA

It is reasonable to suppose that similar conditions existed in other communities in the county whose problems undoubtedly were of like character, and that as time went on comparable measures of correction were indicated and taken.

In the formative period of the system of health and sanitation and related matters, when provision was made by the State Board of Health and Vital Statistics (organized in 1872) for collection and publication of returns of births and deaths, members of the Protestant and the Catholic clergy joined with physicians in advocating and putting into effect measures of public health and preservation of vital statistics. (In the epidemics of smallpox in the early eighties members of the clergy served as volunteer vaccinators, accepted aides to the official boards of health.)

In the early seventies a change came about also in the office of coroner; although by that time the county coroner commonly was a physician, in the earlier years this officer often had been a layman. In Houston County a lay citizen, John Goffrey, was the first coroner, serving from some time in 1856 to January, 1857. The second in office was a physician, Dr. M. J. Veiling (Velling?), who served from January, 1857, to January, 1860, and again from January, 1862, to May, 1863. Others who were coroners in Houston County previous to 1870 were G. J. Sheldon, H. B. Laflin and T. A. Pope, physicians, and Wyman Trask and F. M. King, laymen. Later physicians in the office were J. M. Riley, from 1870, four years; G. L. Gates, from 1874, six years; Paul Bjornson, 1880; W. H. McKenna, 1881; H. D. B. Dustin, 1882; H. P. Johnson, from 1883, four years; C. S. Cranson, from 1887, four years; H. P. Johnson, from January, 1891, to July, 1893 (Dr. Johnson left the county in 1892 and F. H. Whitney finished the term); L. K. Onsgard, from 1893, two years; F. H. Whitney, from 1895, four years; and A. M. Crandall, from 1899 to 1903.

Steadily, because of mutually valuable relationships of county, city and township health officers with the State Board of Health, conditions of sanitation and health throughout communities improved. Gradually there was corrected the general impression that health officers and boards had nothing to do except in the presence of epidemics, and there were obviated also the frequent local misinterpretations of duty as lying in the correction of offenses on the premises of neighbors rather than in the application of sanitary measures at home. Around 1885 many additional boards of health were formed, and by 1895 and 1896 there were more than 1,782 local boards of health and, in addition to these, there were twenty-two village boards which were in direct communication with the state board. Local boards of health were not always composed entirely of physicians. Very often, even usually, there was included on a local board some responsible layman or laymen of the community who felt or would take an active interest in the well-being of the people and who could be trusted to enforce regulations relating to health and sanitation. In La Crescent, Houston County, in 1881 and 1882, as will be shown, there was an outstanding lay member.

Houston County (as of November, 1942) has not had a county board of health. From the beginning each town and village has had its own health officer who has co-operated with the State Board of Health.

*Diphtheria in Houston County.*—It was not until the period of 1878-1879 that Houston County appeared in the reports of the State Board of Health, and then in a single, undetailed statement from Dr. John B. Le Blond, health officer of Brownsville, relating to the presence of diphtheria in the village. Apparently a serious problem did not exist at that time, and Dr. Le Blond stated that until then (1878) Brownsville Village had been entirely free from diphtheria for twenty-two

years. He added that in 1863 (fifteen years earlier), however, a highly malignant form of the disease had broken out in the township, in a little valley two miles from the village, and had spread over the surrounding highlands. There follows his description of the conditions relating to that early epidemic:

The first case made its appearance in the latter part of July in a family consisting of six, the parents and four children. The disease originated spontaneously, contagion being out of the question, not one of the family having been out of the neighborhood. The house contained one room used for all purposes. The ventilation was poor and the hygienic surroundings very bad. The children all died. Other cases followed in rapid succession in the highlands, in a region of the country about two miles east and west by six miles north and south. This was on the ridge land overlooking the river bottoms and valleys. In most instances the disease seemed to appear at different points spontaneously rather than to be communicated by contagion. Very few families had more than one room in their houses.

—Seventh Annual Report of the State Board of Health  
of Minnesota, January, 1879, page 45.

In 1879, mild, sporadic cases of diphtheria occurred in Caledonia and its vicinity, chiefly among families living on low ground and under unfortunate conditions of sanitation and nutrition. From time to time in succeeding years occasional cases of the disease were recognized in the county and the outbreaks were controlled.

There is included here an unofficial account of the inroads of diphtheria in a family of ten children living near Caledonia in the late nineties. The eldest son in this family had been working in the Canadian Northwest and he died there in a boarding house. The landlady sent his trunk home, whereupon the nine young brothers and sisters rummaged through its contents at will. Subsequently six of them came down with diphtheria; five of the six died, the sixth became extremely ill and a seventh child was sickening. The course of the disease was so rapid that not until the five had died did the parents summon a physician, Dr. R. Y. Ferguson, of Caledonia, who, it appears, took care of "county cases." To quote from material received by the writer from Mrs. Ferguson:

He found five chubby-faced children dead. Three were lying in bed and two in a cradle. The mother said that when she opened the trunk, she had detected a peculiar odor, but evidently she did not recognize the seriousness of the disease. The family lived on the Ridge Road and people drove miles out of their way, through the valley, rather than pass the farm where the five children had been buried by a La Crosse undertaker. Caledonia undertakers did not feel equal to the occasion. The rest of the family responded to treatment very readily with no further cases.

*Smallpox in Houston County.*—In the annual report of the State Board of Health from 1879 and 1880 the threat of smallpox was stressed for the state as follows:

The statistics of the seaboard cities and of the quarantine stations indicate that smallpox may be introduced into our state, by eastern or foreign immigrants during the coming summer and fall. We are not prepared to meet it, because, as we have had no general outbreak of the disease for many years, parents have neglected vaccination. . . . *Vaccination and revaccination are our only real protection against smallpox*—a protection so easy and safe that parents incur a fearful responsibility in neglecting it.

In 1881 and 1882 variola and smallpox brought La Crescent, Hokah and Union Townships of Houston County into local prominence and into the records of the State Board of Health. At that period the state board was still dependent for its information concerning public health and sanitation in outlying districts on accidental correspondence, newspaper comment and direct requests for advice. Cases

## HISTORY OF MEDICINE IN MINNESOTA

in point of potential or actual danger to communities were factors in bringing about closer co-operation and organization of boards of health throughout the state.

In the *Pioneer Press* for November 2, 1881, it was reported that there was a case of smallpox in Hokah and that Dr. H. B. Train was in attendance. On November 9 the secretary of the state board (Dr. Charles N. Hewitt) went to Hokah to meet with the local board of health. On November 11 the state department received notice of the appointment of Dr. S. C. White as health officer for the *village* of Hokah and on November 15, of the appointment of Dr. Train as health officer for the *town* of Hokah. On December 28 Dr. Train reported a case of suspected smallpox in La Crescent Township (town); on January 1, 1882, A. H. Brayton, chairman of the local board of health in La Crescent Township, reported on the activity of the board, and throughout the ensuing weeks he set an example of faithful performance of duty.

Steadily the situation in Hokah Township and in Hokah Village grew more involved (the story appears in detail in the records of the State Board of Health), and it became evident that there was not perfect accord between the respective health officers. Into the scene there entered also Dr. W. W. Holden, who had come to this community in 1877 and who at the time of the outbreak of smallpox was serving as health officer for Union Township. On February 16, the chairman of the Hokah village council telegraphed an urgent request that the secretary of the state board come immediately; that there were new cases and "physicians do not agree." By February 17 it was known that there were twenty-five cases of variola and varioloid in and about Hokah; one in the village of Hokah, ten in the township of Hokah; five in the township of La Crescent and nine in the township of Austin (sic) Union. At this time Dr. Franklin Staples, of Winona, acting for Dr. Hewitt, met with the board and the health officers at Hokah. On March 6, as the result of the appeal cited, of a letter from Dr. S. C. White to Dr. Hewitt, and of the natural apprehension of residents of Houston Village, who had petitioned the state board to quarantine Hokah and adjoining townships, the secretary met at Hokah with the three local health officers, Drs. White, Train and Holden. The secretary's request to the health boards of Houston and of Brownsville to send representatives to this meeting received from each the reply, "Can't come."

By March 18, 1882, Dr. White reported that the last quarantine had been raised and disinfection performed in Hokah; this had been done in Union and La Crescent Townships the preceding week. On March 23, Dr. Holden reported having had eleven cases and three deaths in one family, that disinfection had been carried out and the patients discharged; that there had been twenty cases in the entire winter in "Union and Hokah Villages and in La Crescent," and that all patients were well.

Fear was quieted, only to be aroused again by the occurrence of more cases of smallpox reported by Dr. White as being across the river in Hokah Township; the patients reputedly had been seen by Dr. Train. At this time Dr. Train's term of service expired, a fact which he reported to the state board with the information that he was ill and confined to bed (not by smallpox, however). On March 31, in reply to an inquiry from the state department, Dr. Holden, as the local health officer succeeding Dr. Train, stated that there was one family, four miles from Hokah, of which three members had the smallpox, "so reported by Dr. Train." Dr. Holden added, "I shall see them today; the river has been so high that it has been almost impossible to go to them, but they are quarantined." On April 4 he was able to report that five children in one family had had smallpox;

that some of them were well. From this family no more cases were reported, and the disease disappeared from Houston County.

### **Changing Conditions of Medical Practice**

With the regulation of practitioners and their activities and the establishment of institutions of medical education and of public health, medical practice entered a new era.

In the regulation of practice, medical legislation, tending to drive irregular practitioners and quacks from the state, was vital. Improvement in medical schools of Minnesota gave native physicians of the state better opportunity, and the time came when the young physician started in practice by himself instead of seeking association with an established physician, as long had been the custom. And although many of the older practitioners, some of them scarcely qualified to treat the sick, were authorized under the "years of practice" act and continued in active practice for a long time, the official representation of the medical profession of the state was by men of improved professional qualifications.

Although conditions of medical practice changed and stabilized decade by decade, many of the early customs in the care of the sick long persisted, for revolution is a thing of slow growth. As time went on, the physician no longer was an itinerant. Very often his office was in his home. The earliest physician met his responsibility to his patients regardless of conditions of weather and transportation. Often he walked; if he had a horse he rode on its back, and if he could afford fast-driving horses he made his rounds with a buggy, in open seasons, and with a sleigh in the snowy winters. When the automobile came, the physician was the first to recognize its possibilities and to utilize it when it was within his financial reach. Throughout the decades he was, quite unknown to himself, an heroic figure, a source of confidence and courage to his community.

In the fifties, sixties, seventies and eighties the drug store and the druggist held an increasingly important place in the life of the people. In many a village or community the druggist was himself a medical adviser of merit; in many the physician was the druggist also. But the trained and conscientious druggist, as such, then and subsequently, like the trained and worthy physician, worked for better medical education and better medical practice.

In the early decades in the Middle West, the physician who was a facile writer was rare, and indeed the conditions of practice gave little opportunity for contributions to the medical literature, which at that time was not voluminous in any part of the country. From time to time mention is found of a physician in Houston County who wrote medical papers, but not until well after the turn of the century did such writings become an accepted part of professional life, here or elsewhere.

The continuous growth of population, since new citizens continued to enter the county during the seventies and eighties; the improvement in railroads and highways that brought cities and villages closer together and encouraged the growth of intermediate towns; and the corresponding betterment in medical schools and hospitals, near and far, were a stimulus to the members of the medical profession to give greater and better service. By the nineties, in Houston County as in other counties, medical practice had reached a new plane. There were many physicians of the approved schools and others were coming in; quacks received less credence, their activities were more easily controlled than formerly, thanks to legislation, and organized scientific medicine was making steady progress.

*(To be continued in October Issue)*

# President's Letter

This letter is written two weeks PAB, i.e., Post Atomic Bomb. Everyone else is explaining isotope uranium "Ur. 235." The discussions have been adequate in numbers but more terrifying than exhilarating in outlook. Among the certainties is an exaggeration of distrust of the United States in terms of "Have Not" peoples and nations. Before this war it was said that we had too many transportation and household utilities; more than our share of radios and movies—our standard of living (made known to England by the platoons of GI's that crowded the country lanes and pubs) has upset all Europe. Must we now share the potentialities of atom smashing even with countries from which many expect aggression?

All this builds up to a reflection upon the powers of readaptation imposed on our country today as we witness its overwhelming capacity to raise the deadliness of war to a level measureable only in cosmic terms.

After War I it was freely said that another such would destroy the world. That was a world appeal for peace. It is possible that the bomb will become a real agency of peace. But as we measure these shattering developments, the medical profession faces the readjustment to peace with no less misgivings than does any other vocation or employment. Simply naming a few of our most pressing problems may start us thinking about their solution.

1. The military heads are not going to be able to name their own dates and hours for the discharge of many of our fellows so badly needed at home. With the mechanics of war what it has become, where is the need for eight million men in army service, or even half that number?

2. If one-half the doctors in military service are sent home within a year (more likely in six months), have we adequate plans for their reception at home? This concerns practical items of housing, office space, hospital staff appointments and, for many of them, the training courses we have said so much about on paper but left to the future to put into action?

3. The renewal of physicians: It is time to insist on starting our medical schools upon their old schedules of enrollment and teaching freed from all military control.

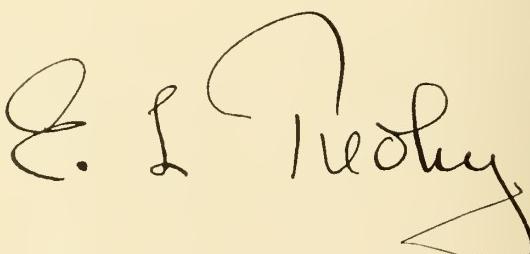
4. For Minnesotan doctors, the time is at hand to wake up and fight for that position in Medicine that has made our profession the best in the world.

(a) Help to develop the pre-payment plans for illness your Society is formulating.

(b) Instruct and contact our representative in Congress about our home needs. The war is over; the trend is distinctly away from National bureaucratic guidance. It will return if citizen groups do not work to make our system function equitably. It has been good enough to win the war—why junk it now!

(c) Study most of all the doctor's relationship to our hospitals. We are committed under any plan now in sight to co-operate with our hospitals. Help guide them and enter them into our future plans for graduate guild guidance and education.

(d) Help to make the Veterans' Bureau facilities serve the medical rather than the political purposes of their establishment. No more such facilities should be built in inaccessible and isolated districts far from concentrations of population. More to the point they should all be implemented into our graduate medical teaching programs. Such a plan will secure for them co-operative Voluntary Staffs. Military drafting of young doctor recruits will only spoil, irritate and create rebellious routinists—secure and independent, but as sterile as mules. And furthermore, with great hopes of world peace ahead, it is absurd to plan on caring for all Veterans in special institutions. As many as possible should be cared for in their immediate home towns.



President, Minnesota State Medical Association.

# Editorial

CARL B. DRAKE, M.D., *Editor*; GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

## WAR'S END

THE rather sudden termination of World War II merits editorial mention. The war just ended was the most widespread and destructive of human lives and property in the history of the world. While human suffering as a result of the war does not terminate with the cessation of fighting, there is cause for rejoicing.

The war performance of our country justifies considerable self-congratulations. We did better than we or our enemies anticipated. That we had the personnel to produce so much highly mechanized war materiel in such a short time was nothing more than marvelous. That we could train such soldiers, fliers and sailors as fighters was equally remarkable.

The medical record should not be overlooked. The expansion of the medical corps of the fighting units with civilian doctors and the high type of service rendered will redound to the credit of the medical profession. It is logical to expect that as the need for physicians in the armed services diminishes with the discharge of millions of enlisted men, a proportionate number of physicians will also be returned to civilian practice where they are urgently needed. How this will be done remains at the discretion of the Surgeons General of the Army and Navy. Although certain medical organizations are urging the return of medical personnel to civilian life, perhaps more rapidly than at present, they rightly emphasize that the sick and wounded in the services must not be neglected.

The expansion of vaccination, the use of sulfa drugs, atabrine, blood plasma, and DDT were all spurred on by war necessity and resulted in the saving of many lives. Many valuable contributions were made to aviation medicine which will be of postwar value. The Red Cross has signified its willingness to continue blood donor centers to provide through "responsible medical and official health groups" free blood for anyone in need of transfusions. Undoubtedly, future generations will profit from some of the scientific advances stimulated by the war.

What can be said of the atomic bomb, which doubtless had much to do with Japan's surrender? Its potentialities for destruction in the hands of an outlaw nation are limitless. It is, however, no more terrifying than the possibilities of chemical warfare to wipe out whole communities of civilians. The allies were undoubtedly ready to let loose new lethal gas in case Germany or Japan used such weapons of war.

Air superiority thus becomes all-important in preventing a bandit nation from striking vital blows without declaration of war. We have more faith in the prevention of such a contingency by the curtailment of the development of aviation in Germany and Japan rather than by education in decent behavior.

Just as it has been difficult for us to understand German psychology, the German gangsters obviously miscalculated American thought. The German nation seemed to have been swept by an epidemic of moral disease. The perfidy of Japan's rulers seems to be endemic.

Although time has not as yet allowed the animosities engendered by the war to subside, we should not forget that in every country there are some right-thinking and right-living citizens, and that in every country, our own included, there are elements that, if released, would revel in acts of violence.

The reconstruction period in our own country, as well as throughout the world, will be difficult. The primary human needs of food, fuel, housing and clothing are and will continue to be great in all corners of the globe. We, in this country, can do something to meet the need.

We, too, shall have our own problems in the return to peacetime status. Inflation is in evidence in many places. While established businesses have largely written off original costs in depreciation, the cost of material and labor make new construction almost prohibitory. Thus the production of new enterprises and new jobs will be handicapped. The necessary marked reduction in incomes which will be necessary if industry is to expand will not be accepted kindly by

those involved. Returning military officers who have become used to the pay of Lieutenants, Captains, and Colonels will not feel kindly disposed to resuming pre-war jobs as bank messengers and wrapping clerks. Readjustment will be difficult.

However, the removal of necessary wartime restrictions is being received with thankfulness, now that the war is over. Restrictions should be as few as possible, consistent with the needs of our diminishing armed forces. The marvelous resources of our country in manpower and material should bring prosperity in the postwar years, providing industry is not stifled by too much government regulation or obstructed by selfish interests.

#### ANOTHER PEPPER BILL

**S**ENATOR Pepper introduced another bill (S. 1318) on July 26, a survey of which appears in our Economics Section of this issue. The bill provides for obstetrical and pediatric care at government expense irrespective of ability to pay by the Children's Bureau and, if this Bureau is transferred to the Department of Labor, under this Federal department. If enacted into law, the provisions will probably be carried out in a dictatorial way from Washington, and the provision of a medical advisory committee without authority will have little function.

When federal financing for obstetric and infant care for the wives and children of servicemen was first proposed, the medical profession hesitatingly concurred as a patriotic gesture with the understanding that such legislation was a war emergency which would terminate after the war. Now the Pepper Bill proposes to expand the obstetric and infant care of wives of servicemen to include obstetric and pediatric medical care to all mothers and children, at a cost of millions and perhaps over a billion yearly of the taxpayers' money.

The medical profession knows what it has been, dealing with the EMIC authorities in Washington, filling out forms, and being told what their fees must be. By the terms of the EMIC, the wives of the servicemen were provided with ward hospital accommodations and were unable to engage obstetricians whose fees were more than the government's allowance. Physicians and many recipients haven't liked it and they won't like this new Pepper Bill.

Can anyone deny that this proposed bill is anything short of socialism and bureaucratic control of medical practice? It is only less malicious than the Wagner-Murray Bill in that it involves only obstetrics and pediatrics.

#### MIGRAINE

**T**O anyone who has suffered from typical migraine the symptoms are very definite. The attack generally begins with blurred vision, an expanding scotoma with a jagged streak of light resembling in form a streak of lightning which scintillates, sometimes in every color of the rainbow. This may last ten or fifteen minutes and is followed by a headache of variable intensity, nausea and vomiting. There is often a history of such attacks among the forebears. Such is the typical attack. Attacks tend to be less severe and occur at less frequent intervals as one grows older—one of the few blessings that accompany aging.

One or more of the symptoms may be absent in a case of migraine, and thus an accurate diagnosis may at times be difficult.

The cause is a vascular phenomenon not accurately determined which results in increased intracranial pressure and headache.

Many sufferers attribute their attacks to certain foods, eye strain, fatigue, or what not. In most cases the cause cannot be determined. The sympathetic nervous system is obviously involved.

While many sufferers seem to obtain relief during an attack from the ingestion of a cup of strong coffee, others have observed that total abstinence from caffeine drinks, notably coffee, tea and coca-cola tends to diminish the frequency and severity of attacks.

While mild analgesics such as aspirin seem to be of value in mild attacks, they are useless in the more severe prostrating form. For the severe attacks ergotamine tartrate has been most widely used in recent years in aborting an attack. In some cases, however, its toxic effects seem to make the patient even more miserable.

Horton et al.\* have recently reported their experience with dihydroergotamine (D.H.E. 45) in the treatment of migraine. It is much less toxic than ergotamine tartrate, has a less sustained con-

\*A new product in the treatment of migraine: a preliminary report (Proc. Staff meeting of the Mayo Clinic, 20:241, (July 11) 1945.

D.H.E. 45 will not be on the market for several months.

tractile effect on the arterioles, and clinically is effective in aborting attacks in a larger percentage of cases. They used an ampoule containing 0.5 or 1.0 mg. of D.H.E. 45 per c.c. marketed by the Sandoz Chemical Company and recommended intravenous administration for most rapid action. They consider it a safe drug for clinical use and state it has no effect on the uterus or blood pressure when given in 1 c.c. dosage. In a series of clinical cases in which it has been used the past three years, they found its effects excellent or good in 75 per cent of typical migraine cases and effective in only 36 per cent of atypical cases. This, however, is much better than their experience with ergotamine tartrate. It seems worth trying.

### STUDIES IN STARVATION

**W**HAT happens to a human being physically and mentally when he has been forced to live on a low diet of turnips, potatoes, beans, and macaroni—a diet almost entirely carbohydrate and lacking in protein, fat and vitamins? How can famine sufferers best be returned to health in a world in which there is a scarcity of food? These are questions of great practical importance, the answering of which is the object of the studies being made at the University of Minnesota under the leadership of Dr. Ancel Keys.

Studies in physiological hygiene have been going on with conscientious objectors housed at the University Stadium since April, 1943. That studies in starvation and recovery be undertaken was urged by members of the group as a worthy humanitarian objective. Various organizations, such as the Brethren Service Committee, the Friends, Mennonites and the Unitarian Service Committee, became interested in such an investigation and have rendered financial and moral assistance.

The starvation experiments began in November, 1944, and the results will not be obtainable for several months more. While the height of the starvation period was reached August 1, the testing of various methods of returning the starved to normal will not be completed for another three months.

One might suppose that with all the available undernourished human beings in the world, the deliberate starving of a group would not be necessary. To evaluate the physical and mental reactions of a starved human being, however, the previous normal should be known.

Those undergoing the test have been examined repeatedly as to their weight loss, basal metabolism, blood and endurance, and their psychological reactions have been observed. It has been noted that all have thought and even dreamed of food and, interestingly, have grown to resent the wastage of food.

Not only has this been a period of investigation of physical and mental effects of undernourishment, but the abundant spare time has been utilized in preparing the group for participation, if opportunity affords, in the rehabilitation of Europe. Realizing, as no one else could, the effects of starvation, the group seemed specially qualified to undertake social service in battle-ravaged Europe. With this in mind, these young men have been studying foreign language and sociology and have been given practical experience in social work outside of their quarters.

No similar scientific observation of the effect of starvation has ever been attempted, and the information which will undoubtedly be obtained as to the results of starvation and the most economical means of returning such victims to normal will be of inestimable practical value, not only following the war but in the future in famine districts.

### OCCUPATIONAL DISEASES

August 15, 1945

To the Editor:

In accordance with your request, I am enclosing herewith a copy of the decision of the Supreme Court of Minnesota, in the case of Robert L. Hunter vs. Zenith Dredge Co. et al., which case was decided by the Supreme Court on July 6, 1945. In that case the Supreme Court of Minnesota held unconstitutional the various provisions of Chapter 633, Session Laws of Minnesota for 1943, relating to the creation and functioning of the so-called medical board to determine certain occupational disease questions under the Workmen's Compensation Law of Minnesota.

I wish to make it clear at the outset, that this feature of the occupational disease law of Minnesota was not inserted in the law at the request of the medical profession of this state. In fact, Dr. Sogge and I appeared before the Workmen's Compensation Committee of both the House and the Senate and stated that while the Minnesota State Medical Association would co-operate, in every way, to make the provision workable, we had our doubts as to the success of the provisions in reference thereto.

Under the law, if an injured workman presented a disputed claim based on an occupational disease, the

## EDITORIAL

matter was forthwith referred to a medical board of three doctors of medicine selected from a panel of fifteen nominees chosen by the Dean of the College of Medicine of the University of Minnesota, the council of the Minnesota State Medical Association and the Governor of Minnesota. The law required that ten of these nominees shall be doctors of medicine with at least five years' experience in the diagnosis, treatment and care of industrial diseases and five of the nominees must be doctors of medicine with at least five years specialization in the field of x-ray diagnosis and treatment. Each party to the proceeding selected one doctor of medicine from the panel and the two doctors of medicine so selected chose a third doctor of medicine to constitute the medical board. The law then provided that the medical board "shall determine such medical questions raised by the pleadings and such as are certified to it by the commission."

The law also provided that the medical board thus chosen could examine the employe and hear and examine witnesses "on controverted medical issues." The law further provided that the medical board shall "file its findings and conclusions with the commission," and that "the findings and conclusions of the medical board insofar as the same concern such controverted medical questions, shall be adopted by the commission as its decision on such questions."

In the Hunter case above referred to, the Supreme Court of Minnesota held that the various provisions in the 1943 occupational disease law relating to the creation and operation of the medical board, are invalid and unconstitutional for the reason that the Legislature did not specify in the law a requirement that a transcript of the evidence upon which the board's findings are based, be filed with the report to the board. The Supreme Court held that because of such failure there is no method by which it can be determined, upon review, whether such finding is arbitrary and oppressive or whether it has sufficient foundation in fact.

The decision of the Supreme Court of Minnesota in the Hunter case does not mean that the entire occupational disease law is invalid, but simply that the provisions relating to the creation and functioning of the medical board are of no effect. The Supreme Court pointed out that henceforth the Industrial Commission of Minnesota will determine questions of occupational disease "in the same manner as it would determine questions of injuries arising out of accidents."

If I can be of any further assistance to you, please let me hear from you.

F. MANLEY BRIST

### PAMPHLET ON REHABILITATION OF BLIND

For the assistance of those charged with the care and rehabilitation of blind patients the Army Medical Department has issued a booklet entitled "Guide for Those Giving Rehabilitation Service to the Blind." Its purpose is to anticipate and answer the questions arising in connection with this type of hospital care. The booklet is intended for use in Army hospitals and centers specializing in Rehabilitation Service for the Blind.

It contains information for those actively engaged in working with the blind, and also for anyone who comes in contact with the blind. The booklet gives valuable hints on the psychology of dealing with this handicapped group.

### HANDS OFF THE DOCTORS

In plans now before Congress to expand the Social Security program, there are provisions for socialized medicine patterned along European lines.

Proponents of such legislation to put the government and its bureaus in the driver's seat over the individual, never like to have the words "socialism," "compulsion," or "taxation," used in describing their plans. But if Federal domination of medicine isn't socialism, then European nations using the same plan are misusing the term.

If deduction of 4 per cent from worker's pay and a similar amount extracted from the employer is not taxation—please offer a more correct term for it. And if the fact that both worker and employer have to pay the fee is not compulsion, then what is it?

About the best argument we can think of for use against putting the government in the medical business is our wartime experience with government bureaus under OPA.

None of us were very happy about the manner in which the La Crosse board administered its job, especially with reference to sugar. And for the country as a whole things were worse. Some places got three pounds of canning sugar. Others 15, still others 10, and some compromised with five or eight. That is not democracy. All should share alike, whether it be the lowest figure or the highest.

Now under Federal domination of medicine we might well expect a bureau, similar to OPA, with offices in La Crosse or Chicago, deciding what treatment you as an individual should have for a specified illness.

You might prefer to consult your former family physician, but if some big shot in government employ thought you should see Dr. Hokum in Cheesburg—that is where you would have to go.

In case you believed a general check-up at the Mayo clinic would be to your advantage you might find it necessary to fill out seventeen forms in quadruplicate before you would be permitted to seek an appointment.

The relationship between patients and their family physician has become an American institution which few of us would wish to have terminated.

The government is seeking to control our lights and power, our telephone systems—and now our medical treatment.

We say, "Hands Off the Doctors."

Medicine has advanced tremendously under private urge, for progress and better treatment. The sulfas and penicillin might be years ahead of us yet if they had had to wait to emerge from a government test-tube.

Politicians monkeying with our power systems—the most efficient and low priced in the world, can do us plenty of harm, but they won't kill us (except possibly through hidden taxes). But government-issued pills, serums and treatments of all kinds—please not for us.

The cost of this measure would run into many billions of dollars each year. The nature of the medical program in the bill is compulsory and just the opposite of the voluntary health insurance programs which now cover millions of individuals in the United States and which are open to all at less cost than the gigantic omnibus social security, health, unemployment and old-age provisions now embodied in one bill before Congress.—Editorial, *Lake City Graphic*, Lake City, Minnesota, August 16, 1945.

# MEDICAL ECONOMICS

Edited by the Committee on Medical Economics  
of the

Minnesota State Medical Association

George Earl, M.D., Chairman

## EXPANDED MATERNAL AND CHILD WELFARE PROGRAM BEFORE CONGRESS

A ten-year program of expanded federal-state maternal and child health services was proposed in a bill, designated S. 1318, introduced in the Senate, July 26, by Senator Pepper and nine other members of the Senate Committee on Education and Labor. It is generally felt that this bill is perhaps the official opening of a campaign to make permanent some of the activities that prevail under the EMIC program.

With the Children's Bureau in the Department of Labor as the Federal administrative agency, the bill authorizes the appropriation of \$100,000,000 for the fiscal year 1945-46 to be divided as follows: \$50,000,000 for maternal and child health programs; \$25,000,000 for crippled children's programs; \$20,000,000 for child welfare programs; and \$5,000,000 for administration.

Amounts for each year thereafter are not fixed, but will depend on how much is required to carry out the purposes of the act and to expand the services year by year until they are everywhere fully available.

This expanded health program for children and mothers is to be administered through the State health departments. It is to be made available to all mothers and children, under twenty-one, who wish to participate in it.

The essence of the bill can be briefly stated: Provided are preventive, curative and corrective medical services for children in home, clinic, and school; dental care in preschool years and throughout a child's school life; mental health and child guidance clinics; expanded medical programs for crippled and other physically handicapped children, and child welfare services for children bereft of parental care or supervision. For mothers, it provides prenatal care, medical and hospital care at childbirth and postnatal care thereafter.

## Senator Pepper Lauds New Bill

Urging early favorable Congressional action, Senator Pepper said in introducing the bill:

"In considering this bill Congress has to keep one basic question in mind: 'Do we as a Nation intend to provide every mother, regardless of where she lives or what the family income is, with an opportunity to get modern, scientific maternity care, and do we intend to see that every child, regardless of who his parents are or where he happens to be born, has a chance to receive good health care, or shall we remain content with present conditions under which some mothers and children get the best care available anywhere in the world while others get little or no skilled medical attention?'"

To illustrate the pressing need for action along the lines proposed in the bill, Senator Pepper said:

"Even in the relatively good year of 1940, about half our children were living in families with incomes of less than \$20 a week. Good maternity care cannot be purchased with the leftovers from \$20 a week after food, clothing and shelter for a family are paid for. At the beginning of 1944, 15,000 crippled children were listed by state agencies as awaiting medical care that they could not receive due to lack of funds under the Social Security Act.

"The issue facing us now," he said, "is how generously and how fast the Federal Government can extend its help to the States until adequate health and child-welfare services are available to all mothers and children."

## Decrease in Mortality Rates Forecast

Pleading further for its passage, he said:

"In my opinion, passage of this measure would result in saving the lives of many of the 7,000 mothers who now die annually in childbirth, and of many of the 118,000 children who die before reaching the age of one year."

He cited the following as contributing factors in the high mortality rates prevailing at present: In 1943, only half of the births in rural areas

took place in hospitals as compared to 90 per cent in large cities where well-functioning public and private health services were more readily available. Nearly 600,000 rural mothers were delivered in their rural homes, 160,000 of them without a doctor in attendance. Two out of every three rural counties have no well-baby clinics where mothers can regularly bring their babies and smallest children to have their health and development examined by a doctor. One thousand of our 3,000 counties have no public health nurse who can help mothers with their problems of infant and child care.

Infant mortality rates, the Senator pointed out, show that today city-born children are by far the most fortunate. The Children's Bureau, he said, estimates that if we could reduce infant mortality rates in places of less than 10,000 population to the level of the rates in larger places, we could save the lives of 10,000 babies each year.

"Good health in children and good health services for children go hand in hand." Enactment of this bill, he stated, will do much to increase the number and quality of health services in rural areas and small towns.

Minnesota came in for some praise from the Senator. "We could save the lives of almost 3,000 mothers if every State had as good a record of maternal mortality as Minnesota has," he said.

Disparities between States are equally startling with respect to maternal and infant death rates, he asserted. In Connecticut infant mortality is down to thirty and in Minnesota to thirty-one per 1,000 live births compared to forty in the nation as a whole. In New Mexico, however, the rate is over ninety. Passage of this bill, Senator Pepper avers, will help greatly to bring States with the poorest child health records up to the level of the better states.

### **States to Determine Programs**

State departments of health and welfare are the heart and center of the programs proposed by this bill, according to the Senator. They are the agencies responsible for knowing which children need help and what resources are required to meet their needs.

No one can blueprint at this stage how every dollar, authorized by this bill, will be used to provide each kind of service in each State, he stated. Each State will be free to plan according

to its own needs to achieve State-wide coverage within a period of ten years.

Each State's share is to be determined according to the proportion of all children under twenty-one in the United States who live in the State; according to the special maternal and child health and child welfare problems of the State; and according to the financial need of the State in providing care for its children. States with high proportions of children in relation to the adult population or with low per capita income will obtain, under this bill, a more liberal share of Federal support than States that are economically better situated.

### **Only a Beginning**

How adequately will this proposed program provide for the general medical care and general welfare of our children? According to the Senator, it is only a beginning. "Medical care and health supervision of children is costly in dollars," he said. "Reliable authorities estimate it comes to somewhere in the range of \$25 to \$40 a year for each child in the United States. With 40,000,000 children under 18 that represents a total of at least one billion dollars for the Country. Thus a Federal appropriation of \$100,000,000 for maternal and child health for a year cannot go very far in meeting these all-over health needs of children. Even if it were divided with mathematical precision among all children, it would come to less than \$2 a child. The authorizations for appropriations that we are suggesting for this year will give us a fair start toward our objective, though it will be only a beginning," Senator Pepper declared.

Obviously, according to the Senator, a Nationwide child health and child welfare program is not something that can be created in a year. For that we must have time to develop services, train personnel, develop facilities, conduct research and demonstrations, and educate parents in the use of facilities and in the application of expanding scientific knowledge.

### **The Bill Gains Support**

That Senator Peppers's presentation of his case is not going unheeded is strikingly demonstrated by the reaction of one large industrial firm in the East, the International Latex Corporation, which presented a quarter page spread in support of this bill in one of our large Minnesota

newspapers recently under the caption "More Important than Atomic Energy—Child Health." This statement, a reprint of a *Washington Post* article read in part:

"The Maternal and Child Welfare Act, introduced in the closing days of the Senate session by Senator Pepper with sponsorship by nearly a dozen colleagues of both parties, seeks a solution for one of the most profound of our national problems. Nothing more intimately concerns our future as a nation than the health of our children. We have not done very much for child health in the past. The Children's Bureau, which would administer the allocation of funds under the proposed law, has been receiving a mere 1½ million dollars to assist in all forty-eight States in developing child welfare services. On this budget, only 400 of our 3,000 counties can be served in any one year. There are not even sufficient funds to take care of our orthopedically crippled children or of the half million youngsters under eighteen suffering from rheumatic fever or of the 70,000 under sixteen with cerebral palsy who could be educated if skilled care were provided for them."

The article concludes with this eulogy for the EMIC program:

"There has been an admirable test for the national program proposed by Senator Pepper in the wartime emergency maternity and infant care program for servicemen's wives and babies. It has been a boon to young mothers and infants. And it has strengthened, without in any way impinging upon, the system of private medicine. Its values have been far too great to be abandoned with the end of the emergency. It should be extended so that good medical care can be made available to mothers and children wherever they live and whatever their economic circumstances. As a Nation, we could make no wiser investment."

#### **EMIC PROGRAM ACCEPTED ONLY AS WAR EMERGENCY MEASURE**

The EMIC program has offered a good example of the way a medical program of this sort works, operated from Washington.

The patriotism of the medical profession was challenged when it was first proposed as an emergency war measure and, as such, the profession felt that it was incumbent on it to co-operate. On the whole, the provisions for caring for infants and wives of servicemen were anything but satisfactory to either the profession or the recipients. Endless hours were frittered away filling out forms, determining eligibility to participate, and trying to keep abreast of regulations that underwent changes every few months. All this, the

profession looked upon as a condition that must be accepted during the war emergency, but now that the war is over, a continuance of these services under federal jurisdiction is certainly going to be regarded with disfavor by the profession as a whole.

The new proposal for the expansion of maternal and child welfare services under the Pepper Bill S. 1318, virtually will extend and broaden the scope of the EMIC program and make of it a permanent program. Under this bill the chief of the Children's Bureau is to formulate the policies after consultation with the state health officers and an advisory committee. Nothing in the act says that the advisory committee is to have any authority or that its advice need necessarily be followed. Permitting the chief of a government bureau to select his own advisory committee and then even to disregard the advice of the committee that he himself selects, smacks of concentration of too much power in the hands of one individual.

#### **MINNESOTA HAS EXCELLENT RECORD**

The medical profession in Minnesota has for many years carried on an intensive campaign through the Committees on Child Health and Maternal Health of its State Association, in co-operation with the State Department of Health, to raise the health standards and improve the medical practices with respect to the mothers and children in the State.

That its efforts have borne fruit is well attested to by the complimentary remarks of Senator Pepper, who places Minnesota second only to Connecticut among the states in the nation in its infant mortality rating. In the field of maternal mortality, also, he singles Minnesota out for its excellent record. His statement before Congress that the lives of 3,000 mothers in the nation might be saved if every state had as good a record as Minnesota, is, of course, gratifying to Minnesota physicians.

While much improvement is still to be sought, what has been done has been accomplished without any other fanfare than a spirited educational program embracing both the physician and the public. For it is only when there is the greatest possible co-operation between the medical profession and the laity that any program can be successful.

Minnesota's experience strongly suggests that

the private practice of medicine is quite capable of getting excellent results without being shackled by federal bureaucracy and supervision to tell it what it shall sow and what it shall reap.

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### "LITTLE MAYO CLINICS" KAISER'S VISION

One of the most prominent of the industrial czars has ideas for promoting "competitive health" by the establishment of a series of group health clinics through bank loans guaranteed up to 90 per cent by the Federal Housing Agency to be made available to groups who undertake to provide prepaid medical care. Mr. Henry Kaiser, writing as guest columnist recently in Drew Pearson's *Merry-Go-Round*, urging support of a bill he is drafting to accomplish this objective, wrote meditatively:

"I can see little Mayo clinics springing up all over the nation. Founded on the sound economics of prepaid medicine, these clinics would operate as going business enterprises, competing to reduce their cost, improve the quality and expand the scope of their service to the public.

"Medicine has a vast market awaiting it in the half of our population that today receives inadequate medical care or no medical care at all. Prepaid competitive medicine, backed by adequate facilities, can reach that market immediately. Construction and operation of the facilities would provide employment—let me be specific—for three million men and women."

And thus we may expect a merry-go-round of socialistic planning that will be interesting to watch.

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### MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

**Julian F. Dubois, M.D., Secretary**

#### Minneapolis Operator of Health Vaportorium Convicted

*Re: State of Minnesota vs. Dehlia C. McMahon*

On August 8, 1945, Dehlia C. McMahon, fifty-nine years of age, 3939 Stevens Avenue So., Minneapolis, entered a plea of guilty in the District Court of Hennepin County, to an information charging her with the crime of practicing healing without a Basic Science Certificate. The defendant, who has no license to practice any form of healing in Minnesota, was sentenced by the Hon. John A. Weeks, Judge of the District Court, to a term of one year in the Minneapolis Workhouse, the sentence being suspended on condition that the defendant close her place of business and refrain, in every manner, from attempting to practice healing.

Miss McMahon was arrested on August 6, 1945, by In-

spector Bernath and Detective Dougherty of the Minneapolis Police Department, at 220 Meyers Arcade, 920 Nicollet Avenue, Minneapolis. The defendant operated a place known as "The Health Vaportorium" where she claimed to be giving treatments for such conditions as "sinus, colds, bronchitis, neuritis, arthritis, nervousness, poor circulation, constipation," et cetera. The defendant charged \$2.00 to \$2.50 for each treatment. The treatments consisted of a vaporized oil bath, massage and vitamins. The defendant admitted that she was selling vitamin tablets which she obtained from the Vitamineral Company, a California concern, with offices at 205 Meyers Arcade, Minneapolis. The defendant stated that a full bottle of vitamin tablets, for which she charged \$12.00, cost her \$10.00, leaving her a net profit of \$2.00. The defendant admitted obtaining various symptoms from patients and then determining herself what vitamin tablets the patient should have. According to the Supreme Court of Minnesota, this constitutes the practice of medicine and subjects the defendant to criminal prosecution.

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#### Milwaukee Quack Denounced by Minneapolis Judge

*Re: State of Minnesota vs. Albert Broden*

On July 17, 1945, "Dr." Albert Henry Broden, "naturopathic physician," fifty-nine years of age, 210 East Mason Street, Milwaukee, Wisconsin, entered a plea of guilty, to an information charging him with practicing healing without a basic science certificate, in the district court of Hennepin county, Minnesota. Broden admitted under oath in court that he is not a "doctor." After being rebuked by the Hon. Arthur W. Selover, Judge of the District Court for his "chicanery," Broden was sentenced to a term of one year in the Minneapolis workhouse, the sentence being stayed on condition Broden "immediately leave the state and stay out."

Broden was arrested, by Inspector Bernath of the Minneapolis Police department after a joint investigation by the Minnesota State Board of Medical Examiners and the Minneapolis police department, on July 14 at the Hotel Andrews where he was conducting a so-called "clinic" in "bloodless surgery." Broden admitted to the court that he charged \$150 for each person who attended his clinic. His records show that he obtained \$600 from three chiropractors and one masseur. Broden represented himself as a "naturopathic physician."

Broden is an old hand at violating medical laws, having been arrested in 1929 at Duluth, Minnesota, and convicted even though he took his case to the Supreme Court of Minnesota. According to the Texas State Board of Medical Examiners Broden has three convictions in that state for violating the medical laws. Broden told the court he was born in Russia and entered the United States at Galveston, Texas, in 1904. He also stated he worked as an orderly in an insane hospital in Texas; then four years as a painter in Texas and eighteen years in the wallpaper and paint business at Racine, Wisconsin. Broden claimed to be a "naprapath" when arrested in Duluth in 1929.

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#### Iowa Chiropractor Arrested at Pine Island, Minnesota

*Re: State of Minnesota vs. Godfried Fruitiger*

Following an investigation by both the Minnesota State Board of Medical Examiners and the State Board of Chiropractic Examiners, Godfried Fruitiger, seventy-two years of age, Wilton Junction, Iowa, was arrested on July 25, 1945, at Pine Island, Minnesota, for practicing healing without a basic science certificate. Fruitiger waived a hearing in Red Wing Municipal Court

## MEDICAL ECONOMICS

before Hon. Francis H. Watson and was held to the district court for trial. However, Fruitiger decided to plead guilty and was taken before the Hon. Charles P. Hall, Judge of the District Court for Goodhue County on July 26, at which time he entered a plea of guilty to an information charging him with violating the basic science law. Judge Hall sentenced the defendant to six months in the county jail and stayed sentence on condition Fruitiger absolutely refrain from practicing healing in Minnesota.

Fruitiger told the court that he was born in Switzerland in 1872 and came to Kasson, Minnesota, in 1886; that he graduated from the Palmer School of Chiropractic at Davenport, Iowa, in 1911, and practiced at Kasson for a time before returning to Iowa. Fruitiger stated he is licensed in Iowa and Georgia. He admitted having been arrested in Alabama for illegal practice but claims the case was dropped. Fruitiger was practicing in a trailer at Pine Island and admitted treating twelve patients the day before he was arrested. Fruitiger made no direct charge for services but the patients left a "gift" of \$1 each. He stated that both of his sons are chiropractors and that his wife and his brother are likewise chiropractors.

The Minnesota State Board of Medical Examiners would like to acknowledge the splendid co-operation of County Attorney Milton I. Holst of Red Wing and also that of Sheriff Lenus R. Olson of Goodhue County, in the prosecution of this case.

### PHYSICIANS LICENSED JULY 13, 1945

#### *June Examination*

- ACKERMAN, Robert Featherston, U. of Tenn., M.D. 1943, Mayo Clinic, Rochester, Minn.
- ALDEN, John Fredolph, U. of Minn., M.B. 1945, 1559 Fairmount Ave., Saint Paul 5, Minn.
- ANDERSON, Harry J., U. of Minn., M.B. 1945, North Branch, Minn.
- ASKREN, Edward Leroy, Jr., U. of Ill., M.D. 1943, Mayo Clinic, Rochester, Minn.
- BARTHOLOMAE, Warren Max, U. of Minn., M.B. 1945, 459 W. Wabasha, Winona, Minn.
- BELSHE, Joseph Charles, U. of Minn., M.B. 1945, 806 Division St., Northfield, Minn.
- BENSON, Lyle Myrvan, U. of Minn., M.B. 1945, Canby, Minn.
- BERGENDAHL, Emil Henry, U. of Minn., B.M. 1945, St. Joseph's Hospital, Milwaukee, Wis.
- BOHN, Donald George, U. of Minn., M.B. 1945, 4625 Nicollet Ave. S., Minneapolis 9, Minn.
- BORGEN, Alfred Edwin, U. of Minn., M.B. 1945, Culver, Minn.
- BRENEMAN, James Chester, U. of Minn., M.B. 1945, Sherburn, Minn.
- BROWN, Spencer Franklin, U. of Minn., M.B. 1945, 706 Delaware St. S.E., Minneapolis 14, Minn.
- BUSARD, John Max, U. of Mich., M.D. 1943, Mayo Clinic, Rochester, Minn.
- CRAIG, M. Elizabeth, U. of Minn., M.B. 1945, 510 15th Ave S.E., Minneapolis 14, Minn.
- DAVIS, Tom II, U. of Minn., M.B. 1945, Wadena, Minn.
- DE LAND, Clyde LeRoy, U. of Wis., M.D. 1943, 367 Champion St., Battle Creek, Mich.
- DERANLEAU, Robert Francis, U. of Minn., M.B. 1945, Northwestern Hospital, Minneapolis 7, Minn.
- DICKMAN, Roy Willard, U. of Minn., M.B. 1945, 5716 Longfellow Ave. S., Minneapolis 7, Minn.
- DILLE, Donald Everett, U. of Minn., M.B. 1945, Dassel, Minn.
- DOMS, Vernon Albert, U. of Minn., M.B. 1945, Woodstock, Minn.
- DRAKE, Robert McCall, U. of Minn., M.B. 1945, 4751 Girard Ave. S., Minneapolis 9, Minn.
- DU BOIS, Julian Faville, N. Y. Med. Coll., M.D. 1945, Sauk Centre, Minn.
- ELDRED, Ruth Elizabeth, U. of Minn., M.B. 1945, 721 8th St., Bismarck, N. D.
- ELY, Robert Stewart, U. of Minn., M.B. 1945, 212 4th Ave. S., South Saint Paul, Minn.
- FEARING, James Edward, U. of Minn., M.B. 1945, 536 11th St. So., Virginia, Minn.
- FEINBERG, Samuel Burton, U. of Minn., M.B. 1945, 916 Newton Ave. No., Minneapolis 11, Minn.
- FELDMAN, Seymour Irving, U. of Minn., M.B. 1945, 801 Huron St. S.E., Minneapolis 14, Minn.
- FLIEHR, Richard Reid, U. of Minn., M.B. 1945, 1810 Bryant Ave. S., Minneapolis 5, Minn.
- FLYNN, Louis Leo, Jr., U. of Minn., M.B. 1944, 523 8th Ave. No., South Saint Paul, Minn.
- FORTIER, Quincy Ernest, U. of Minn., M.B. 1944, 2109 Larpenteur Ave. W., St. Paul, Minn.
- FOX, James Rogers, U. of Minn., M.B. 1945, 1572 Portland Ave., Saint Paul 5, Minn.
- FURNELL, Dale Quinn, U. of Minn., M.B. 1945, 1812 Portland Ave., Saint Paul 5, Minn.
- GAARD, Richard Carl, U. of Minn., M.B. 1945, 505 S. Cretin, Saint Paul 5, Minn.
- GHOLZ, Anthony Carroll, U. of Minn., M.B. 1945, 3005 James Ave. So., Minneapolis 8, Minn.
- GLAEDER, Warren Carleton, U. of Minn., M.B. 1945, 757 Dayton Ave., Saint Paul 4, Minn.
- GLAESER, JOHN H., U. of Minn., M.B. 1945, Swanville, Minn.
- GRAIEWSKI, Stanley John, U. of Minn., M.B. 1945, 200 Ridge St., Ironwood, Mich.
- GRAIS, Melvin L., U. of Minn., M.B. 1945, 1210 James Ave No., Minneapolis 11, Minn.
- GREEN, Cloid Darryl, U. of Minn., M.B. 1945, 1526 S. Main Ave., Sioux Falls, S. D.
- HABERLE, Charles Albert, U. of Minn., M.B. 1945, 2939 Polk St., N.E., Minneapolis 13, Minn.
- HARTMAN, Mortimer Albert, U. of Minn., M.B. 1944, 1736 Penn Ave. N., Minneapolis 11, Minn.
- HAVENS, Fred Z., U. of Minn., M.B. 1945, 1121 10th St. S.W., Rochester, Minn.
- HEDENSTROM, Philip Carl, U. of Minn., M.B. 1945, Cambridge, Minn.
- HIRSH, Stanton Allen, U. of Minn., M.B. 1945, 1800 Bayard Ave., Saint Paul 5, Minn.
- HOGANSON, Donald Earl, U. of Minn., M.B. 1944, 1319 Bixby Ave., Bemidji, Minn.
- HUBER, Robert W., U. of Minn., M.B. 1945, 403 Case, Saint Paul 1, Minn.
- HUNT, William, U. of Minn., M.B. 1945, 107 Homewood Dr., Fairmont, Minn.
- JENSEN, Louis Christian, Jr., U. of Minn., M.B. 1945, 5038 34th Ave. S., Minneapolis 6, Minn.
- JOHNSON, David Randolph, U. of Minn., M.B. 1945, RFD No. 2, Benson, Minn.
- JOHNSON, Einer Wesley, Jr., U. of Minn., M.B. 1944, 605 Lake Blvd., Bemidji, Minn.
- JOHNSON, Herbert Wesley, U. of Minn., M.B. 1945, 719 Sherwood Ave., Saint Paul 6, Minn.
- JUERGENS, Manley Frederick, U. of Minn., M.B. 1945, Belle Plaine, Minn.
- KANNE, Earl Rupert, U. of Minn., M.B. 1945, Bigfork, Minn.
- KARON, Allan Burton, U. of Minn., M.B. 1945, 2007 Summit Ave., Saint Paul 5, Minn.
- KELLEY, Vincent Charles, U. of Minn., M.B. 1945, Canby, Minn.
- KELLY, William Daniel, U. of Minn., M.B. 1945, 2215 St. Clair Ave., Saint Paul 5, Minn.
- KING, Robert Lee, Jr., U. of Minn., M.B. 1945, 5729 Mich Ave., St. Louis 11, Mo.
- KIRILUK, Lawrence Ben, U. of Minn., M.B. 1945, Hallock, Minn.
- KNOCHE, Harvey A., Jr., U. of Minn., M.B. 1945, Adrian, Minn.
- KOTVAL, Russell J., U. of Minn., M.B. 1945, Vesta, Minn.
- KOZA, Donald Warren, U. of Minn., M.B. 1945, 309 W. Page St., Saint Paul 7, Minn.

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- KUCERA, William John, Jr., U. of Minn., M.B. 1945, 5047 Gladstone Ave. S., Minneapolis 9, Minn.
- LANDA, Marshall, U. of Minn., M.B. 1944, 1245 Oliver Ave. N., Minneapolis 11, Minn.
- LARSON, Oliver Edward Henry, U. of Minn., M.B. 1945, Elgin, Minn.
- LEE, Madison Johnson, Jr., Tulane U., M.D. 1944, Mayo Clinic, Rochester, Minn.
- LEIDER, Allan Richard, U. of Minn., M.B. 1945, 1015 Beech Ave., Saint Paul 6, Minn.
- LERNER, Aaron, U. of Minn., M.B. 1945, 827 Oliver Ave. No., Minneapolis 11, Minn.
- LIE, Dagfinn, U. of Minn., M.B. 1945, Fisher, Minn.
- LINDGREN, Verner V., Jr., U. of Minn., M.B. 1945, Winnebago, Minn.
- LITIN, Edward Mortimer, U. of Minn., M.B. 1945, 1614 Penn Ave. No., Minneapolis 11, Minn.
- LOOMIS, Earl Alfred, Jr., U. of Minn., M.B. 1945, 2027 Kenwood Pkwy., No. 211, Minneapolis 5, Minn.
- LOISELL, Charles Tallon, U. of Minn., M.B. 1944, 2630 E. 1st St., Duluth 5, Minn.
- LUND, George B., U. of Minn., M.B. 1945, Clarkfield, Minn.
- LUNDSTEN, Leslie Charlton, U. of Ill., M.D. 1944, Bethesda Hospital, Saint Paul 1, Minn.
- MAC DONALD, John Walker, U. of Minn., M.B. 1945, 1932 Humboldt Ave. S., Minneapolis 5, Minn.
- MALONEY, William Farlow, U. of Minn., M.B. 1945, 1720 W. 31st St., Minneapolis 8, Minn.
- MANDEL, Sheldon Charles, U. of Minn., M.B. 1945, 1001 Newton Ave., No. 202, Minneapolis 11, Minn.
- MAUNDER, John Blackmore, U. of Minn., M.B. 1945, 325 Grand St., Fort Atkinson, Wis.
- McGEARY, George Daniel, U. of Minn., M.B. 1944, 5045 Garfield Ave. So., Minneapolis 9, Minn.
- MEADOWS, James Allen, Jr., Tulane U., M.D. 1944, Mayo Clinic, Rochester, Minn.
- MINERS, George Wallace, U. of Minn., M.B. 1945, 3148 Irving Ave. S., Minneapolis 8, Minn.
- MULHOLLAN, William Melville, U. of Minn., M.B. 1944, 5301 Chateau Place, Minneapolis 7, Minn.
- MULLER, John Joseph, U. of Minn., M.B. 1945, Hingham, Mont.
- NELSON, David John, U. of Minn., M.B. 1945, 500 Garland St., Austin, Minn.
- NELSON, Paul Andrew, U. of Minn., M.B. 1945, 3110 5th Ave. S., Minneapolis 8, Minn.
- NEWCOMB, Carl E., U. of Minn., M.B. 1945, Good Samaritan Hospital, Los Angeles, Calif.
- NEWMAN, John Anderson, U. of Minn., M.B. 1945, 1217 W. Platinum St., Butte, Mont.
- NIMLOS, Kenneth O., U. of Minn., M.B. 1945, Stephen, Minn.
- NIMLOS, Lenore Ostergren, U. of Minn., M.B. 1945, Rte. No. 7, Lake Gervais, Saint Paul, Minn.
- O'BRIEN, John Charles, U. of Ill., M.D. 1944, St. Joseph's Hospital, Saint Paul 2, Minn.
- O'BRIEN, William Austin, Jr., U. of Minn., M.B. 1945, 1589 Northrop St., Saint Paul 8, Minn.
- PALM, Ernest Theodore, U. of Minn., M.B. 1945, 506 4th St., Braddock, Pa.
- PAULSON, Eric Randolph, U. of Minn., M.B. 1945, Turtle Lake, N. D.
- PEIK, Donald John, U. of Minn., M.B. 1945, Brownston, Minn.
- PETERSEN, William E., U. of Minn., M.B. 1945, 1447 Chelmsford St., Saint Paul 8, Minn.
- PETERSON, Willard Hall, U. of Minn., M.B. 1945, 519 Marshall Ave. No., Litchfield, Minn.
- PLASHA, Matthew Karl, U. of Minn., M.B. 1945, 314 University Ave. S.E., Minneapolis 14, Minn.
- RALL, Joseph Edward, Northwestern, M.B. 1944; Mayo Clinic, M.D. 1945, Rochester, Minn.
- REITMANN, John Henry, U. of Minn., M.B. 1944, 908 Bush St., Red Wing, Minn.
- REIZMAN, Bert, U. of Minn., M.B. 1945, 874 Linwood Ave., Saint Paul 5, Minn.
- ROZYCKI, Anthony Thomas, U. of Minn., M.B. 1945, Blackduck, Minn.
- RUNQUIST, John Manley, U. of Minn., M.B. 1945, 211 Kent Rd., Duluth, Minn.
- SANDEEN, Robert McFarlane, U. of Minn., M.B. 1945, 126 N. Everett St., Stillwater, Minn.
- SCHNUGG, Francis Joseph, U. of Minn., M.B. 1945, 750 Main St., Hackensack, N. J.
- SIGLIN, Irvin S., U. of Chicago—Rush, M.D. 1940, Mayo Clinic, Rochester, Minn.
- SKOGERBOE, Rudolph Benjamin, U. of Minn., M.B. 1945, Erskine, Minn.
- SPENCER, BERNARD JAMES, U. of Minn., M.B. 1945, Blue Earth, Minn.
- SPRAFKA, Joseph Lynold, U. of Minn., M.B. 1945, Ancker Hospital, Saint Paul 1, Minn.
- STORAASLI, JOHN Phillip, U. of Minn., M.B. 1945, 1200 Pitts St., Alexandria, Va.
- STROUT, Bernard Peter, U. of Minn., M.B. 1945, R. 5, Faribault, Minn.
- STUTZMAN, Francis Lloyd, U. of Minn., M.B. 1945, Newport, Minn.
- SWEETSER, Theo Higgins, Jr., U. of Minn., M.B. 1945, 4240 Garfield Ave. S., Minneapolis 9, Minn.
- THIEM, Chester Ekholm, U. of Minn., M.B. 1945, Gibson, Minn.
- TICHY, Fae Yvonne, U. of Minn., M.B. 1944, 3546 Russell Ave. N., Minneapolis 12, Minn.
- TILLOTSON, Irving Gray, U. of Minn., M.B. 1945, 2264 Commonwealth Ave., Saint Paul 8, Minn.
- TWOMEY, John Edward, U. of Minn., M.B. 1945, 647 Thomas Ave., Saint Paul 4, Minn.
- WERNER, George, U. of Minn., M.B. 1942; M.D. 1943, 1239 Russell Ave. No., Minneapolis 11, Minn.
- WHITING, Adolph Martin, U. of Minn., M.B. 1945, 2400 Vincent Ave. No., Minneapolis 11, Minn.
- WILLIAMS, Walter Samuel, Tulane U., M.D. 1941, Mayo Clinic, Rochester, Minn.
- WISNESS, Osmund Arthur, U. of Minn., M.B. 1945, 721 9th St. W., Willmar, Minn.
- WOOD, George F., Jr., Temple U., M.D. 1944, 112 4th Ave. S.W., Watertown, S. D.
- WOOD, Newell Edwin, U. of Minn., M.B. 1945, 725 4th Ave. N., Valley City, N. D.
- YAEGER, John J., U. of Minn., M.B. 1945, Sanborn, Minn.
- ZAWORSKI, Leo Albert, Marquette U., M.D. 1944, 1301 N.E. Jefferson St., Minneapolis 13, Minn.

### *Reciprocity Candidates*

- ANDERSON, Gordon Arnold, U. of Minn., M.B. 1934; M.D. 1935, Deer Lodge, Mont.
- COLE, Frank Abraham, L. I. Col. Med., M.D. 1934, 1425 LaSalle Ave., Minneapolis 4, Minn.
- RADL, Cyril Joseph, Marquette U., M.D. 1932, 2746 Stinson Blvd., Minneapolis 13, Minn.
- SKROCH, Eugene Edward, U. of Wis., M.D. 1943, Mayo Clinic, Rochester, Minn.
- WATTS, Campbell Franklin, U. of Iowa, M.D. 1943, Mayo Clinic, Rochester, Minn.

### *National Board Candidate*

- MORROW, J. Robert, U. of Buffalo, M.D. 1943, Mayo Clinic, Rochester, Minn.

# Minneapolis Surgical Society

Meeting of March 1, 1945

The Vice President, Robert F. McGandy, M.D., in the Chair

## COMMON INJURIES ASSOCIATED WITH FOOTBALL AT THE UNIVERSITY OF MINNESOTA

WILLIAM A. HANSON, M.D., F.A.C.S.

Associate Clinical Professor of Surgery, University of Minnesota  
and

GEORGE W. HAUSER, M.D.

Acting Football Coach and Assistant Professor of Physical Education,  
University of Minnesota

Minneapolis, Minnesota

Probably a better title for the essayist subject would be "What's behind the football?" In order to illustrate my point and give you a panoramic view, undoubtedly a few preliminary remarks illustrated by lantern slides will enlighten your conception.

In this series from 1942 to 1945, one then can summarize and be impressed with the relatively few serious accidents which have occurred in over three hundred athletes who engaged in this sport. This, I believe, can be answered by the frequently repeated slogan "don't come out for football unless you are physically fit."<sup>6</sup> To be sure, there are other considerations, such as physical evaluations, regular diet, habits, supervision of fundamentals advocated by the coaching staff, as running, blocking, tackling, falling, et cetera. In addition, each player has a complete uniform, well padded and, protected, which weighs 7.5 to 9 pounds.<sup>6</sup>

One must also bear in mind about 4 to 6 hours is spent by the trainers in getting the players taped and bandaged before practice and for these athletic contests. One may gain some idea what this means when I inform you during a period of two months 300 rolls of 2 and 3-inch roller bandage, 2 to 3 gallons of compound tincture of benzoin and 750 yards of 12-inch adhesive are consumed.<sup>6</sup>

In this report I shall not include minor injuries such as bruises, cuts and infection which occasionally develop and are of no consequence; however, I wish to emphasize the young inexperienced player generally is more prone to injury than those of more experience due to his eagerness to play, without remembering his previous fundamental instructions. Also certain types of "athletic builds" are more prone to injuries than others of the same height and weight.<sup>5</sup>

During this period there have been no serious cerebrocranial injuries which is likewise true of intra-abdominal injuries, as ruptured spleens or kidneys. There have been no injuries of the cervical or dorsal spine, clavicles, humeri, femurs or pelvic bones; however, there were two probable cases of acromiclavicular separations of minimal character.

There were no serious chest injuries sustained although there were two cases of fractures of the ribs, one of the 9th right, and the other the 7th left with one case of fracture separation of the 7th costal cartilage.

Regarding the lumbar spine, one athlete sustained a



Fig. 1. W. D. Fissured fracture of second left transverse process.

"fissured fracture of the transverse process of the second left lumbar vertebra with minimal disability."

Extremities do encounter most of the injuries. Of these, one was a medial and posterior dislocation of the right elbow with an incomplete longitudinal fracture of the articulating surface of the ulna.

From (1) The Department of Physical Education, University of Minnesota—Louis F. Kellar, Acting Director, Professor of Physical Education; (2) The Department of Surgery—Owen H. Wangenstein, M.D., Director, Professor of Surgery; (3) The Students' Health Service—Ruth E. Boynton, M.D., Director.



Fig. 2. H. W. Fracture right navicular bone.

Fig. 3. T. W. Fracture right navicular bone.

Fig. 4. W. W. Fracture left navicular bone.

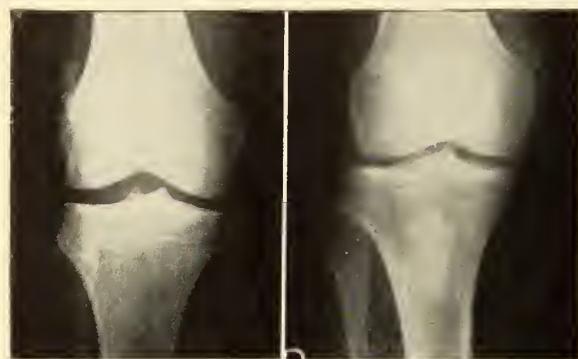


Fig. 5. E. L. (Left) Fracture of upper outer portion of the tibia with separation of the outer cartilage of knee joint.

Fig. 6. E. L. (Right) End results four months after injury.

There were three navicular fractures, two of the right wrist, and one of the left which later proved to be an old fracture from high school competition.

In the hands, there were three fractures of the metacarpal bones of the thumb at the base, while one was associated with a dislocation of the thumb. All these injuries occurred in the right hand, two in the thumb and one in the fourth finger. Three fractures occurred in the phalanges and two dislocations of the fingers at the mid and distal joints.

Of the lower extremities one was sustained in the right tibia at the upper outer articulating surface with separation of the cartilage and a subluxation of the knee joint; the other being a transverse fracture of the upper one-third of the right tibia and fibula.<sup>1</sup>

There were no cases of dislocation of the humerus at the shoulder joint.

Fractures of the nasal bones occurred twice, and there was one case involving a fracture of the medial wall of the left orbit and extending into the ethmoid sinuses.

Olecranon bursitis occurred twice while prepatellar bursitis was encountered four times, producing moderate disability.

Sprains of the ankle occurred seldom, this being due

to careful taping and bandaging before the contestant engages in the athletic contest.

There were no fractures of the tarsal, metatarsal or phalangeal bones of the foot.

The question may be asked regarding intervertebral discs associated with injuries from football. Reviewing the findings of the 300 players, this can be answered in the negative.<sup>8</sup>

Our most troublesome and serious injuries have been in the knee joint. This disability occurred in nine athletes, the mechanism being well understood and explainable by this competitive sport. Of these nine cases no injury was severe enough for operative interference.<sup>3</sup>

### Summary

A review of the injuries sustained by 300 contestants in collegiate football at the University of Minnesota from 1942 to 1945, has been presented.

### Discussion

**DR. GEORGE A. HAUSER:** I want to congratulate Doctor Hanson on the fine report he made. I know that it is quite a job to collect the material necessary for the presentation of this paper.

As regards football injuries, several things have impressed me during the last three years, and one is the small number of injuries that we have had in comparison to those of the years preceding. I know that we have had more contact work and more scrimmage work that might produce injury than we have had previously. We used to have a room in the Health Service with a six-bed ward called the football room. During the football season and spring practice, that room was almost always occupied by men with football injuries. The past three years there have been very few cases that have required hospitalization. I tried to analyze what might be the reason. It may be due to the fact that our squads are largely composed of men in service training, and these men are on regular routine as far as their sleep and meals are concerned, and they do get a lot of physical activity and work outside of their football. It might be that they are in better physical shape than our squads were in other prewar years, accounting for the fact that we have had fewer injuries. We have had more contact work during the past three years because we practice football all summer. These boys are young and inexperienced and the only way we can produce a football team is to scrimmage more than in normal times.

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Now the disabilities that we have in football are the result of trauma or injury. However, these are largely composed of injuries that involve bones and joints and very little soft tissue injury. The protection that our equipment gives does away with a majority of this latter

is that of a man falling holding his hand out to block his fall, falling on the palm and throwing the strain to the acromioclavicular joint and producing a separation at this site. A man may be lying on the ground and another man falls on the upper shoulder and due to com-

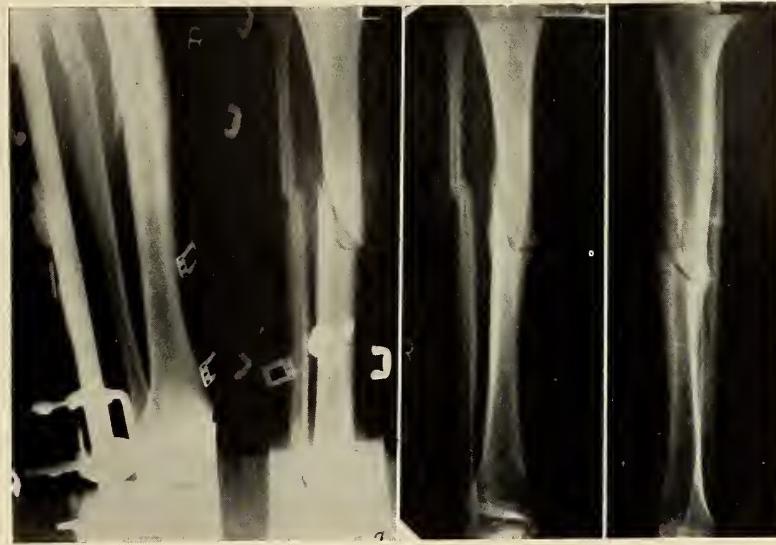


Fig. 7. H. W. Fracture of the right upper tibia and fibula following injury.

Fig. 8. H. W. Appearance two and one-half months after injury with moderate callus formation.

type of injury. The manufacturers and designers have developed equipment that does protect the body against direct contact. I know that the injuries that we used to have—"the charleyhorses," hematomas of the thighs and other areas—are practically things of the past. The thigh pads fit so well that blows in that area do not cause injury.

The joint injuries give as much trouble as ever. The joints involved most are the knee, shoulder and elbow. It used to be that the ankles were the greatest problem. Ankle injuries would cause the most disability, at least days away from practice, but as our taping improved, and the tape itself improved, we were able to protect ankles so well that bad ankle injuries now are a rarity. The ankles are always taped before every practice, including every member of the squad, and the men doing this work become very proficient at it. It is a rare case when one sees a bad injury to an ankle that was well taped.

There is a problem that gives us trouble and one that has been increasing. I refer to injuries of knees. It has been thought by some that, due to the fact that we have protected the ankle so well, the number of knee injuries has increased, and they base their thoughts on the fact that an ankle well taped and not able to give under stress will throw the strain up to the knee, and the knee receives the injury instead of the ankle. Whether this is true or not I do not know, but at least we do have more injury to the knee now than we have had in the past. Some seem to think that due to the fact that most of the young people are riding in automobiles, they don't develop their legs as the generation did previously when almost everyone walked to the places they wanted to go, and that may be one factor, too. I do know that we have more knee injuries now than ten or fifteen years ago.

The shoulders are becoming less and less of a problem. It is practically impossible to hurt a shoulder with a direct blow such as a tackle. The shoulder pads are too well designed and injuries to this area have decreased. The type of shoulder injuries that we do get

pression may produce a fracture of the clavicle. We do not have many shoulder injuries that are caused by a direct blow to the shoulder because shoulder pads give too much protection.

Elbows give very little trouble outside of trauma. We pay very little attention to injury to the small joints of the hand. To dislocations and some fractures we simply give some protection by splinting to the next finger, and they can play almost as well with them as without them.

Knees give a great deal of trouble. The biggest troubles are the injuries that involve the cartilage, and the medial cartilage is usually the one involved. We have found that these can be operated on with excellent results in these young individuals. Boys can compete in football again following operation almost on the same basis as they competed previously.

I have been impressed with the fact that, in order to get good results in these operated knee cases, postoperative care is important. In practically all of these cases, we used to keep these players in bed for ten days or two weeks following operation, but it is well accepted now that it is best to get them up and about three days following operation. For some unknown reason, atrophy of the thigh and leg muscles seems to take place very rapidly following knee operations, and after lying in bed for ten days or two weeks, there is a very noticeable reduction in size compared with the normal leg that has not undergone operation. It can be very easily demonstrated that if the proper regime is not followed, the atrophy just does not clear up nor the leg recover its normal function and size. It is necessary to put them on a rigid program of exercise to develop the musculature around the knee to the same point as it existed previous to operation. Also, about 50 per cent of the stability of the knee is dependent on the muscle development around the knee, so I think that the more muscle development that we can build up following operation, the better end results they are going to have. Our procedure is to get them up as soon as possible in order to prevent as much atrophy as we can, and when they are able to, we put them on a stationary bicycle and start them out on a

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short program of exercise and see how much reaction they have around the knee after the first day. They usually get edema and swelling the following morning, and pain at first, and if it is too great, we cut down the exercise for the next day. If they tolerate it, we try to step up the exercise and keep them on the bicycle for about thirty days, and on the thirtieth day they should be getting one-half to forty-five minutes of peddling on the bicycle daily. After that we put them on the track and start them on running, without turning or twisting of any kind. They run on the track for two months, giving them a workout every day. They should not do any active work in football for six months. Following that, we have been able to get good functional results, and most boys can go back and play football without any greater likelihood of injury or handicap as compared to boys with unoperated knees. Some of these injuries involving the menisci are complicated by involvement of the crucial ligaments and lateral ligaments, but by muscular build-up these players are enabled to go back and play good football following operation, even if they have these other complications. The management following operation is very important.

I have nothing further to say except to thank everyone for the opportunity to be here tonight and listen to the paper by Dr. Hanson.

DR. E. A. REGNIER: I would like to ask, what is the purpose of taping the ankles before games? I understand that all men's ankles were taped, whether they had injuries or not. Physiologically speaking, is it well to have tapes on a man's ankle when he has had no injury? You assume by that that you reinforce the structures? Is that physiologically correct? Do you not jeopardize the knee joint?

DR. HAUSER: Regarding ankle taping. We just found out by experience that you can't hurt a properly taped ankle to any great extent. To avoid ankle injury, we tape them all before play, and by doing that we can just about eliminate bad ankle injuries.

Ankle injury was the one injury that used to cause more days lost from practice than any other injury. A bad ankle injury usually causes disability for as much as six weeks, and in order to prevent that we routinely tape them.

We have had quite a number with fractures of the transverse processes of the vertebrae which have been associated with different types of muscle and tissue injury that takes place with the fracture. As an example, we had a football player that had clean-cut fractures through five processes and never missed a football game, and he played just as well with that injury as he did previously without it. Some others have had one process involved with severe pain, and were disabled to such an extent that they were unable to play most of the football season. Most of them had very little pain and discomfort from this type of injury and, as Doctor Hanson said, we were dealing with groups who wanted to get well and resented any injuries that would keep them from playing. All players co-operate very well, as a rule, in their treatment.

About the individual with sinus arrhythmia. We had two boys out for football with this condition. Both of them were studied carefully from the standpoint of cardiac pathology. These two individuals seemed to have had more endurance and could stand more exercise than other members of the squad. Both of these youngsters seemed to run without any fatigue and would lead the group in wind sprints. They were checked afterward and there was no apparent injury to the heart muscle itself. It is interesting because the individual of that type who is not studied carefully would be advised to keep away from all exercise. We start these boys very carefully to see how they get along

and observe them daily until we are assured that they can carry on as well as any other member of the squad. They feel better in regard to their future than before they were on the squad, as they found out by experience that they can compete successfully with other boys their age.

DR. R. C. WEBB: Would you mention your experiences with intervertebral disc injuries or disease among football players?

DR. HAUSER: We haven't had any on the squad. I believe this is a very rare injury in football.

DR. WEBB: I was interested in Dr. Hanson's reference to the fractured transverse processes, in which, with a minimal amount of treatment, he obtained excellent results. I remember some years ago, I had a man with four transverse processes fractured, who insisted on returning to work in four days, and who got one of the best results I have ever had in transverse process fractures. I wish Dr. Hanson would elaborate on the treatment on that particular case of fractured transverse process and also on the disability if any, which resulted.

I have gained the impression from Dr. Peyton that he hasn't had any intervertebral disc operations among football players, and I wonder if Dr. Hanson has had any cases in which he had found any signs or symptoms of intervertebral disc injuries among football players at Minnesota.

DR. HANSON: Regarding Dr. R. C. Webb's question of treatment of the player with fracture of the second transverse process. He was given supportive treatment by modified brace, heat and massage and necessary medication to control pain, and had minimal disability. Later he became a great "All American." If this had been an industrial accident, I am convinced there would have been a prolonged disability.

No instance of intervertebral disc injury was found by ourselves or the neurological consultants who have reviewed the records of the 300 contestants who played football from 1942 to 1945.

DR. EARL C. HENRICKSON: I would like to know what is done to keep the skin in good condition when they are taped so frequently?

DR. HANSON: There are a few who do have trouble from the strapping and from the application of the compound tincture of benzoin. Two had an allergy to benzoin, but otherwise the taping caused no trouble.

### Bibliography

1. Boehler, Lorenz: Treatment of Fractures. 4th English Edition, pages 396-403. Baltimore: Wm. Wood & Co., 1936.
2. Boehler, Lorenz: Treatment of Fractures. 4th English Edition, pages 390-393. Baltimore: Wm. Wood & Co., 1936.
3. Christopher, Frederick: Text Book of Surgery. 3rd Edition, pages 730-737. Philadelphia & London: W. B. Saunders & Co., 1942.
4. Christopher, Frederick: Text Book of Surgery. 3rd Edition, pages 518-523. Philadelphia & London: W. B. Saunders & Co., 1942.
5. Hauser, George W.: Personal communication.
6. Kellar, L. F.; Bierman, B.; Dawson, L.; Hauser, G. W.: Personal communication.
7. Morris-Scheaffer, J. Parsons: Human Anatomy. 10th Edition, pages 349-357. Philadelphia: The Blakiston Co., 1942.
8. Peyton, W. T.: Personal communication.

## CONGENITAL DUODENAL ATRESIA

## Report of Case

RICHARD R. CRANMER, M.D.

Minneapolis, Minnesota

Congenital duodenal obstruction can be subdivided into intrinsic and extrinsic varieties, the latter being caused by the pressure of the peritoneum or fibrous bands upon the lumen of the duodenum as the rotation of the bowel is effected in about the third month of intrauterine life. The former, or intrinsic obstruction, is a diaphragm formation within the lumen of the duodenum, occurring most frequently in the second portion. This is the result of developmental error. Duodenal obstruction of either type is not a common condition, but the mortality rate is extremely high and this gives it importance among the diseases of infancy. Recognition and prompt treatment are essential. These cases present symptoms and physical findings immediately following birth, and not two, or three, or four weeks subsequent as is the case in congenital pyloric stenosis.

A review of the embryological development of the intestinal tract is not amiss in the discussion of this pathological condition, because it is the abnormal procession of development which is the etiological factor. During the early months of fetal life the gastro-intestinal tract is a simple rod of epithelium and mesoderm with practically no lumen. The upper end dilates into what later becomes the stomach. This portion grows in length and assumes the form of superimposed coils; while the distal portion of this tract dilates slightly to become the descending colon, the sigmoid, and the rectum. All of this tract lies on the left side of the abdomen during the early months. The small bowel increases in length and forces itself through the umbilicus causing in reality a hernia. Later, the bowel loops are retracted and are returned to the left side of the abdomen. The cause of this herniation through the umbilicus is not entirely understood. In the upper left quadrant of the abdomen near the spleen, the large and the small intestine then become joined. At this period of development there is no evidence of a cecum, an ascending colon, or a transverse colon; but, as the large bowel increases in length, these organs appear on the left side of the abdomen and slowly take a course downward and to the right and subsequently occupy the space in the lower right quadrant and right side of the abdominal cavity. This is what is familiarly known as the rotation of the colon. The liver, which during the early months occupies the right side of the abdominal cavity, slowly reduces in size and the space thus made is occupied by the cecum and the ascending colon. If this rotation is not normal, the result is angulation and possibly compression of the duodenum due to the pull of the peritoneal covering over its second portion, resulting in obstruction of an extrinsic nature. In all but one of 20,000 cases of rotation and adjustment, the rotation and adjustment is perfect and the lumen of the duodenum is not affected.

The intrinsic type of duodenal obstruction, as stated before, is due to a diaphragm or septum developing within the lumen of the duodenum, or perhaps a failure

of the bowel to develop a lumen at one place. This septum may be single or may be multiple. It may be complete or it may be nearly complete. In the instances of partial obstruction, vomiting may appear at a later date, but in the complete atresia this appears immediately after birth. All the symptoms of intestinal obstruction are present. Vomiting appears shortly after birth and is continuous until it is relieved by appropriate measures or until the patient succumbs. If the diaphragm is proximal to the papilla of Vater, there is no bile present in the vomitus; and, in that respect, it resembles congenital hypertrophic pyloric stenosis. But, if the diaphragm is in the second portion, where it usually is, bile and duodenal content are always present in the vomitus. The stomach becomes distended and the upper abdomen prominent, while the lower portion of the abdomen remains flat. Where this condition is suspected, an x-ray examination using a thin mixture of barium should be done at once. On the plate it will be found that the stomach is dilated, that the pylorus is dilated, and that the duodenum down to the point of atresia is also dilated. There the column of barium ends abruptly and no gas is seen below that point. Dehydration in this condition, as in congenital hypertrophic pyloric stenosis, is one of the early developments and it should be combated both pre-operatively and postoperatively by parenteral fluids. Immediate operation is imperative if the life of the patient is to be saved. If there is any medical situation in which time is an element in the treatment, it must be in acute intestinal obstruction in infants. The two principal dangers are pulmonary involvement, e.g., pneumonia caused by inhalation of vomitus, and peritonitis secondary to rupture of the duodenum.

The diagnosis is made on the symptoms, physical findings, and x-ray findings; and on the type of vomitus expelled. These patients are always poor surgical risks. The operation that must be done is, of necessity, a shocking one to these tiny patients. One does not know definitely the type of operation that will be followed on entering the abdomen, but, if it can be definitely proved to be a diaphragm in the duodenum below the entrance of the common bile duct and pancreatic duct, the operation that seems to give the greatest hope is a gastrojejunostomy. Even with the diaphragm proximal to the papilla of Vater, that operation is considered the most logical. In some cases, it is a matter of separating adhesions or perhaps opening the bowel and dividing the diaphragm and then closing the bowel. In most cases, this has not been successful. A duodenal jejunostomy is also a practical operation in the case of obstruction due to duodenal diaphragm if the duodenum has not been too dilated and the walls therefore too thin. All types of operations are difficult and attended with considerable mortality. The jejunum and ileum are always very small as they have never been distended with gas or

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content passing through them. They are never thicker than an ordinary pencil and sometimes much smaller than that. To do a gastrojejunostomy or duodenoejunostomy with a bowel as small as that is obviously difficult.

Up to 1932 Ladd could find but ten cases in which there had been successful operations and seven of these were his; but by 1937 Ladd reported twenty-eight additional cases in the Children's Hospital in Boston. These included all types of small bowel obstruction and not duodenal obstruction, only.

### Report of Case

The patient, a dehydrated and slightly jaundiced but otherwise healthy female infant five days of age, was first seen by me on the 24th day of November, 1943. Dr. S. T. Kucera, of Lonsdale, whose case it was and who delivered the mother, reported that vomiting had started on the second day and followed every feeding thereafter. The vomitus contained bile but no blood. The vomiting occurred within a few minutes after feeding and sometimes was projectile. The bowels had moved only once, the stool being light brown in color.

**Physical Examination.**—There was considerable fullness in the epigastrium. The lower abdomen appeared less prominent. On percussion, a tympanic note was elicited over the epigastrium and a dull note over the lower abdomen. The doctor stated that he had observed peristaltic waves in the epigastrium passing from left to right after the child was given food. A small barium meal, which was thin in character, was given and the patient x-rayed. The stomach, the pylorus, and the first portion of the duodenum were well visualized. The barium came to an abrupt stop in the second portion of the duodenum. There was no gas visible in any part of the small bowel beyond. The doctor administered parenteral fluids starting on the second day. As the case seemed to present definite findings of a duodenal obstruction, preparation for operation was made. The operation was done on the 24th day of November, 1943. A vertical incision was made in the upper abdomen slightly to the left of the midline. The bulging stomach was first seen. This was pressed upward and the tiny loops of the small bowel were visualized. There was no distention of these small loops. The pylorus was distended, as was also the first portion of the duodenum. The jejunum was located at its beginning in preparation for a gastrojejunostomy. On opening the small bowel, a curved probe was used to explore the distal portion of the duodenum. It passed freely up to the second portion where it stopped. An anterior gastrojejunostomy was done. Because of the extreme smallness of the jejunum, this was difficult. Five silk and 000 chromic catgut were used with atrumatic needles in making the anastomosis and the anastomosis was made close to the pylorus.

The patient remained in the hospital until the 5th day of January, 1944. There was an occasional emesis of greenish material during the first ten days post-operative. The patient's birth weight was 7 pounds; on the fourth postoperative day, it was 6 pounds, 8½ ounces; on the 7th postoperative day, it was 6 pounds, 12½ ounces; on the 9th day it had dropped down to 6 pounds, 9½ ounces. From that time, it continued to increase until its weight was 8 pounds, 1 ounce, on the day of discharge, which was the forty-first postoperative day. Beside parenteral fluids, the patient was given water on the first postoperative day, and breast milk on the second postoperative day, in addition to amino acids in the form of Amigen and a high carbohydrate formula. In addition, the patient received several subcutaneous injections of whole blood. Two days before operation, the hemoglobin was 120 per cent, the white

cells 11,000. Four weeks after surgery, the hemoglobin was 75 per cent, the white cells 11,500.

The patient made a good recovery and is now about a year and a half old. Her weight now is 30 pounds. She acts and appears normal in every way. She appears to have no digestive distress and apparently is assimilating her food in a normal manner. The mother states that she is as active as any of her other children at her age. The food now is digested in the stomach with the bile and pancreatic juices coming back into the stomach, whence they pass on through the stoma.

Dr. Kucera has very kindly brought the patient in and it is interesting to see how she has developed with these digestive tract changes that are present.

I wish to present the x-ray pictures of this case. It will be seen that the stomach is immensely distended as also is the pylorus and the first portion of the duodenum. No gas is visualized in the small bowel. The picture taken a few days after operation shows that gas is now getting into the small bowel, and that all loops are distended. This was definitely a case of complete atresia of the duodenum, the obstruction not being caused by adhesions or any other existing cause.

### References

1. Buchanan, E. P.: Congenital duodenal obstruction from anomalous mesenteric vessels. *Am. J. Surg.*, 30:499, 1935.
2. Cottam, Geoffrey I. W., and Cottam, Gilbert: Congenital atresia of duodenum, with coexisting congenital band obstruction of lower bowel and other anomalies. *Journal-Lancet*, 62:83, 1942.
3. Davis, D. L., and Poynter, C. W. M.: Congenital occlusions of intestines; with report of a case of multiple atresia of jejunum. *Surg., Gynec. & Obst.*, 34:35, (Jan.) 1922.
4. Donovan, E. J.: Congenital atresia of duodenum in newborn; duodenoejunostomy. *Ann. Surg.*, 103:455, 1936.
5. Ladd, W. E., and Gross, R. E.: *Abdominal Surgery of Infancy and Childhood*. Philadelphia: W. B. Saunders, 1941.
6. Ladd, William E.: Congenital duodenal obstruction. *Surgery*, 1:878, 1937.
7. Ladd, William E.: Congenital obstruction of the small intestine. *J.A.M.A.*, 101:1453, 1933.
8. Potter, E. B.: Congenital obstruction of duodenum: correction by duodenoejunostomy. *Northwest Med.*, 29:261, 1940.
9. Stetten, DeW.: Duodenoejunostomy for congenital, intrinsic, total atresia at duodenoejejunal junction. *Ann. Surg.*, 111:583, 1940.
10. White, C. S., and Collins, J. Lloyd: Congenital duodenal obstruction. *Arch. Surg.*, 47:858, 1941.
11. Young, E. R., and Mueller, J. J.: Atresia of duodenum. *J. Iowa State M. S.*, 28:240, 1938.

### Discussion

DR. E. A. REGNIER: I have treated but two cases of congenital pyloric obstruction. One was of the extrinsic type and the other was an intrinsic obstruction. Unfortunately when I saw the latter baby it was two days old, had aspirated a good deal of gastric secretion and had bilateral pneumonia. The baby vomited continuously, the vomitus mostly bile. The ray of the chest showed a complete mottling of the chest. A barium study showed a picture similar to that of Doctor Cranmer's case. The obstruction was in the third portion of the duodenum at the point where the mesenteric vessels normally cross. The duodenum was so dilated that it bulged above the colon, and the diameter of the duodenum was greater than that of the stomach. Barium given by mouth, after a period of a few hours, was all in the duodenum and when examined under the fluoroscope the barium could all be compressed back into the stomach. There seemed to be no functioning pylorus whatever and no barium traveled beyond the duodenum. Under local anesthesia I opened the abdomen and found this tremendously dilated duodenum with no gas below. A needle on a syringe was inserted into the bowel below the point of obstruction and air injected into the lower bowel. We tried to force this air through the diaphragm obstructing the lumen of the duodenum but it was impossible. A sharp-pointed knife was used to thrust through the wall of the duodenum and then through the diaphragm causing the obstruction much in the manner of doing a myringotomy. Leakage

was prevented by a purse-string suture around the opening in the duodenum. A Kelly forcep was used to completely disrupt the membranous diaphragm. Air and fluid freely passed the point of obstruction and jejunum became filled. The baby succumbed to pneumonia about eighteen hours later. I submit this method of procedure as a very quick way to relieve the obstruction. There was no contamination of the peritoneal cavity and local anesthesia was ample in this very sick child. Autopsy showed a clean peritoneal cavity and gas and liquid throughout the intestinal tract. There was atelectasis of both lungs due to aspiration of vomitus.

**DR. CRANMER:** Dr. Regnier mentioned the distending of the bowel with air below the point of obstruction. Ladd uses that procedure. He dilates the portion and

enlarges the duodenum before he does the gastrojejunostomy. This distends the bowel and one has more tissue to work with.

Doctor Cotton reported a case like this in 1942. It was published in the *Journal-Lancet*.

We didn't say anything about the danger of the contrast media, but we are dealing with a desperate situation, and in these little patients it is necessary to get accurate information. Ladd thinks we can get the information we want if the atresia is high up in the intestinal tract, without giving barium mixture but he does use it in diagnosing these cases. Ladd and Gross have published a book on surgery in infants entitled "Abdominal Surgery of Infants."

## SUDECK'S DISEASE

### Sudeck's Acute Bone Atrophy

ROLLA I. STEWART, M.D.  
Minneapolis, Minnesota

This disease is a rapidly progressing osteoporosis occurring most frequently in polyarticular regions and usually distal to the site of injury. The wrist and ankle are the most common sites but it also occurs in the spine and long bones. Kummele's disease of the spine may be considered as belonging to this classification.

This condition was first described by Sudeck in 1900.<sup>4</sup> At that time he considered it an infectious process, but two years later agreed with Kienböck<sup>3</sup> that it was a reflex neurotrophic phenomenon.

Although this condition may follow a severe injury, it usually results from a minor contusion or a sprain. Following the trauma there appears a peculiar vasomotor and trophic disturbance which has been designated by a variety of names<sup>1</sup>, depending on the outstanding symptom, such as acute atrophy of the bone, post-traumatic osteoporosis, reflex nervous dystrophy, reflex nervous atrophy, peripheral acute trophoneurosis, traumatic vasospasm, traumatic angiospasm, and chronic traumatic edema. It is evident that various authors have focused their attention on different manifestations of the same syndrome. The vasomotor disturbance, while prominent at first, may later be overshadowed by trophic changes. A hard, non-pitting edema is only one symptom and is sometimes hardly noticeable. The osteoporosis, if systematically looked for, is usually found and can be distinguished from atrophy due to inactivity by its sudden appearance after trauma, by its spotty distribution and by the accompanying pain and vasomotor disturbance.

In general, the average case may be described somewhat as follows: After the acute symptoms of a comparatively mild injury have subsided, often without damage to bones, tendons or large vessels, there appears a hard, non-pitting edema which is frequently accompanied by paroxysms of pain. The skin becomes glossy with a bluish tint, and the extremity is sensitive to draughts, to changes in temperature, and to superficial and deep pressure. Sensory disturbances are usually indefinite; there is often a glove-like hypoesthesia which

does not follow any sensory nerve distribution. At first the muscles are hypertonic, due to an increased reflex irritability, but later become atonic. Their electric excitability is diminished, although of normal quality. The temperature of the skin is first higher and later lower than that of the unaffected extremity. Occasionally there appears profuse sweating, increased growth of hair, or a weeping eczema. The nails become brittle and ribbed. The bone shows a characteristic spotty atrophy. The capsules of the joints shrink; movement of such joints is extremely painful, and mobilization of such contractures aggravates the condition.

Oscillometric studies of the peripheral circulation reveal first an increase and later a decrease in the height of the oscillometric curve. The minute vessels are less responsive to cold; the hyperemic reaction to cold appears much slower and lasts longer. This is an abnormal vasomotor response which in turn may result in the metabolic "trophic" disorders.

Histologic sections taken from involved extremities reveal edema of the subcutis, areas of minute hemorrhages, perivascular infiltrations, and shrinkage of fat tissue. The bone has been studied by Fontaine and Herrmann.<sup>2</sup> They found an apposition of osteoid tissue without calcification and a spotty distribution entirely unlike any other type of bone atrophy.

The important feature of this peculiar disturbance of tissue metabolism is that an exaggeration of a nutritional reflex, which is set up by the initial injury, does not subside when the effects of the trauma have been overcome but becomes a fixed, self-perpetuating mechanism in which the catabolic (destructive) activities are predominating. Thus the atrophy of the skin, subcutis, and bone may be regarded as an active process.

Sudeck's acute bone atrophy should be differentiated from venous and lymphatic edema, from tuberculous or pyogenic osteomyelitis, gonorrhreal arthritis and from infection of the tendon sheaths and fascial spaces. In the lower extremity, it may simulate spasmodic flat foot. In compensation cases it is often mistaken for malingering.

## MINNEAPOLIS SURGICAL SOCIETY

*Treatment.*—Pain is the chief symptom that the patient desires relieved. For the treatment of Sudeck's atrophy, one may easily list a number of treatments. The common methods of physiotherapy, such as massage, motion of even the most gentle passive variety, and diathermy, usually aggravate the victim's suffering. Immobilization, which so often brings relief of pain in arthritis, simple trauma and fractures, adds nothing to the comfort of a patient with acute osteoporosis.

Moderately severe cases may be given repeated injections of novocain solution at the site of the primary injury. Repeated lumbar sympathetic block may be used if the disease is located in the lower extremity.

In severe cases the most effective treatment is sympathectomy, that is, for the upper extremity cervical sympathectomy, and for the lower extremity lumbar sympathectomy. Mention should be made of periarterial sympathectomy or surgical stripping of the adventitia from the brachial or femoral artery. While this latter procedure has been viewed as of only temporary benefit and as anatomically unsound, it is given unqualified recommendation by Herrmann as of great value in the treatment of Sudeck's acute bone atrophy.

### Case Report

Mr. C. R., aged fifty-five, on June 6, 1941, was injured by a horse stepping on his left foot. An x-ray taken the same day of the injury revealed no evidence of a fracture or dislocation of the bones of the foot or ankle. Within less than a week's time, pain in the foot increased and the foot became cyanotic and swollen. Because of the severe pain in the foot, his family physician, fearing that he may have overlooked a fracture, mailed the x-ray films to Doctor Morse, who also read them as negative.

On July 17, a plaster-of-Paris cast was applied to the lower extremity. After a period of about two weeks, it was necessary to remove the cast because of increased swelling of the foot. For the next three weeks, treatment consisted of moist packs, gentle massage, and diathermy to the foot and ankle with no noticeable benefit. By August 19 the foot appeared slightly less cyanotic, and there was less pain on attempts at motion in the ankle joint.

I saw the patient for the first time on August 22 through the courtesy of his family physician, Dr. H. M. Juergens. At this time, the foot was still markedly swollen, tender to pressure, and somewhat cyanotic. I advised elevation of the leg and applied an ace bandage. At this time, another x-ray film was taken of the foot and ankle. These films showed the typical mottled type of bone atrophy of Sudeck's disease. A plaster-of-Paris walking iron cast was applied to the lower leg on September 18, with the ankle placed at a right angle degree, and the patient was encouraged to walk. He continued to use the walking cast satisfactorily for the next five weeks when it was removed on October 25, which was about four and one-half months since his original injury. From this date on, he continued to improve, though slowly, so that by June, 1942, he was able to perform his usual farm work.

A recent communication from his family physician states that the patient's condition has remained about the same for the past two and one-half years. Toward the latter part of the day, the ankle and foot become slightly swollen, which produces a limp on walking.

### Conclusions

1. Sudeck's acute bone atrophy is a disease entity with characteristic roentgenological changes.
2. It should be treated by sympathectomy, during the acute phase of the disease.

### References

1. de Takats, Geza, and Miller, Donald S.: Post-traumatic dystrophy of the extremities (a chronic vasodilator mechanism). *Arch. Surg.*, 46:469-479, 1943.
2. Fontaine, R., and Herrmann, L. G.: Post-traumatic painful osteoporosis. *Ann. Surg.*, 97:26-61, 1933.
3. Kienböck, R.: Ueber acute Knochenatrophie bei Entzündungsprozessen an den Extremitäten (fälschlich sogenannte Inaktivitätsatrophie der Knochen) und ihre Diagnose nach dem Röntgen-Bilde. *Wien. Med. Wochenschr.*, 51:1345-1348, 1901.
4. Sudeck, P.: Ueber die acute entzündliche Knochenatrophie. *Arch. f. Klin. Chir.*, 62:147, 1900.

### Discussion

DR. H. O. MCPHEETERS: I was very fortunate in being invited to speak before the Brooklyn Surgical Society on February 1, and the Los Angeles Surgical Society on February 9. While making the trip East, I went on to Boston to watch Smithwick do his lumbo-dorsal sympathectomies, and I can assure you my time was well spent. During the trip East and later West, I saw five different outstanding men do this work, but Smithwick's technique is far superior to them all. He does his work so easy and so cleverly that it makes you feel there is nothing to it. On the other hand, he does a very thorough piece of work. His statistics covering cases of hypertension three years postoperative are outstanding. His reports are by far the best of any in the United States. He believes his fine results in hypertension are due to the radical ganglionectomy. He removes the ganglia from the eighth dorsal to the second or third lumbar, together with a great splanchnic branch on both sides. He operates one side and a week later does the second side.

Doctor Hinton in New York is following Smithwick's technique in every way as closely as possible, and reports more than one hundred and twenty cases with the same fine results.

Doctor Smithwick believes his incision from the crest of the ilium upward along the lumbar muscles over the twelfth and two inches above the eleventh rib is what makes the operation easy. He removes all the twelfth rib and three inches of the eleventh rib. He then reflexes the pleura forward by gauze dissection, but leaves the band of tissue with the eleventh and twelfth nerves intact, going in both above and below this band. The diaphragm is then sectioned from the walls laterally and posteriorly so as to give more freedom of exercise.

In making rounds postoperatively it was not at all uncommon to see patients with a pre-operative systolic of 260 and diastolic of 140, who two weeks postoperatively had a systolic of 140 over 80 or 90 diastolic.

The clinical improvements in these patients was very inspiring. The patients themselves were thrilled at the relief of headaches and other symptoms.

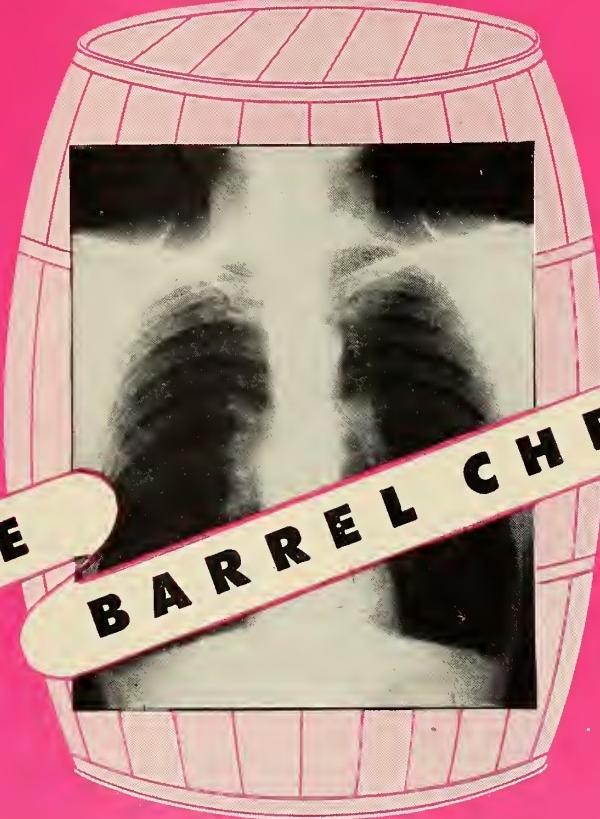
It was interesting to note that both in the East and West more surgeons were using cotton for sutures.

I was both surprised and disappointed in the varicose vein work I saw. Some men have returned to the most radical vein resection ever. They simply add a very carefully done high sapheno-femoral ligation to the old vein resection as was done twenty years ago. Personally, I feel it is a step backward. Over a period of years I have been able to get uniformly fine results in the large majority of cases with a high sapheno-femoral ligation together with a second section of the vein in the lower thigh, and then very carefully controlled follow-up injection treatment.

After seeing the work done in both the East and the West I believe that this is the most conservative, common sense, and middle ground, of any. It is one that I propose to continue and follow.

DR. F. R. GRATZEK: I congratulate Doctor Stewart on his presentation of Sudeck's atrophy. There is nothing I can add to the subject. We have been aware of this condition at the University Hospital for several years. I shall report a patient whom we thought had Sudeck's

(Continued on Page 764)



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## MINNEAPOLIS SURGICAL SOCIETY

(Continued from Page 762)

atrophy, who later was found to have a different disease. Because of the history of trauma, quite often we may be led into the wrong diagnosis.

The patient was a male about twenty-six years of age who sustained a fracture of his right humerus while pitching during a baseball contest. His local surgeon treated him for a while, but because of the pain, swelling and non-union, the patient was referred to the University Hospital's surgical clinic.

Physical examination showed the very marked swelling of the right arm. Roentgenograms revealed an ununited spiral fracture of the humerus and a great deal of bone atrophy. This so-called atrophy became progressively worse and the swelling persisted. After several months biopsy was attempted, but because of profuse uncontrollable bleeding, no tissue was obtained.

Later roentgenograms showed destructive changes in the scapula and almost complete destruction of the humerus. The arm was amputated and the condition diagnosed as hemangioendothelioma on microscopic examination.

I mention this case to show that a diagnosis of Sudeck's atrophy may be made when there is continuous pain, swelling and bone atrophy out of proportion to the usual discomfort following a moderate degree of trauma.

**DR. STEWART:** There are reports in the literature showing benefits in this condition using acetocholine and prostigmine.

Regarding Dr. Bratrud's remarks, I believe that if sympathectomy is to be done at all, it must be done early.

The meeting adjourned.

ERNEST R. ANDERSON, M.D.,  
*Recorder*

## PHYSICIAN VETERANS' EDUCATION PROVIDED FOR BY G I BILL

Physician veterans of this war are eligible to obtain graduate education in the postwar period under the provisions of the so-called "GI Bill," which entitle them to payment of tuition and also a subsistence allowance while taking their courses, a conference with officials of the Veterans' Administration has disclosed.

The information, which is of the "greatest importance to all physicians now serving with the armed forces," is contained in a preliminary report of the Subcommittee on Postwar Education of Physician Veterans, of the American Medical Association's Committee on Postwar Medical Services.

The report points out that it was the opinion of the official in charge of the administration of that phase of education of veterans that the approved schools and hospitals in which the physician veterans would be taking their graduate training can be regarded as institutions eligible for recognition as educational centers in which such educational benefits might be provided under the law.

The conference brought out the fact that the law, as interpreted, makes it possible for any physician now in any of the branches of the service, who has been on active duty for more than ninety days, to be eligible for any of the benefits provided by the law.

In addition to the tuition and fee benefits provided under the law, physicians coming under the provisions of the act also will be paid a subsistence allowance of \$50 per month if without a dependent or dependents, or \$75 per month if he has a dependent or dependents.

The tuition and fee benefits and the subsistence allowance for physicians engaged in such courses will be subject to limitations which depend on the duration of service and similar factors—*AMA News*, Nov. 9, 1944.



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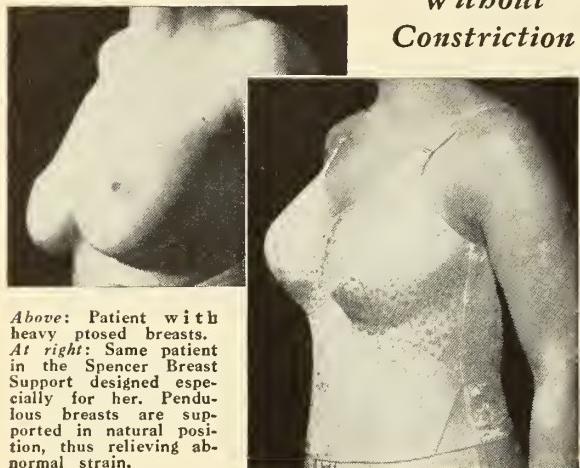
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## In Memoriam

### EARL M. ANDERSON

Lt. Earl M. Anderson, Minneapolis, was one of four men killed in an airplane accident at Glenview, Illinois, June 5, 1945.

Lt. Anderson was born in Minneapolis, December 22, 1917. He graduated from Edison High School in 1934, being valedictorian. He received his M.D. from the University of Minnesota in 1940, interned at Minneapolis General Hospital, and took a fellowship in surgery at Rochester before entering the service in April, 1942.

Lt. Anderson served a year at a base hospital and another aboard ship, both in the South Pacific, before serving as flight surgeon at Pensacola, Florida. He was stationed at the naval base at Glenview, Illinois, at the time of his death.

In November, 1943, Lt. Anderson married Mary Frances Hawes of Minneapolis, when he was home on leave from Saipan.

### LEWIS L. MAYLAND

Dr. Lewis L. Mayland, formerly a resident of Minnesota and a resident of Great Falls, Montana, since 1913, died March 6, 1945, following a month's illness.

Dr. Mayland was born October 13, 1871, at Kenyon, Minnesota, the son of Lars A. and Uni Thorsness Mayland, who owned a farm in Goodhue County. He attended Luther College in Decorah, Iowa, and Carleton College, and taught school for two years in northern Minnesota before attending the medical school of the University of Minnesota, graduating in 1896.

He practiced in Faribault with his brother, Dr. Martin L. Mayland, before taking over the practice of Dr. Eric O. Giere at Hayfield. In 1899 he moved to Red Wing and in 1902 to Bagley, Minnesota, where he practiced until he moved to Chester, Montana, in 1910. In 1913 he became established at Great Falls.

In 1897 Dr. Mayland married Ranveig S. Bugge, a native of Minnesota. She passed away in 1942.

Dr. Mayland is survived by one son, Jennings L. Mayland, who is in the army; three daughters, Maxine and Montana Mayland of Great Falls, and Mrs. Thomas M. Johnson of Billings.

### BRET VERN BATES

Dr. B. V. Bates, a practitioner at Browns Valley, Minnesota, for the past twenty-one years, died at the Veterans Hospital, Minneapolis, August 6, 1945, at the age of sixty-two.

Dr. Bates was born at Springfield, Nebraska, October 6, 1882. He received his early education at Fullerton, Nebraska. After teaching school for two years and clerking for the Burlington Railway for two years, he attended the University of Nebraska and Drake University, receiving his medical degree from the latter in 1909.

## IN MEMORIAM

He practiced in Nebraska a few years and then moved to Wheaton, Minnesota, where he was associated with Dr. C. F. Ewing from 1914 until 1924. He then moved to Browns Valley where he had since practiced.

Dr. Bates always had a keen interest in public affairs and served as Democratic county chairman of Traverse County for many years. He had been health officer for Browns Valley since 1926, served two terms as member of the village council, and was a past president of the Town and Country Club.

During World War I, Dr. Bates enlisted as a 1st Lieutenant, later being promoted to Captain, and served with the Medical Corps, 139 Ambulance Company, 35th Division. While serving in France, he was awarded the Distinguished Service Medal for aiding the wounded under intense machinegun fire.

Dr. Bates was a member of the West Central Minnesota Medical Society, the Minnesota State and American Medical Associations. He was also a member of the Royal Arch Masons, the Town and County Club of Browns Valley.

### HUGH CABOT

Dr. Hugh Cabot, former member of the staff of the Mayo Clinic, died August 14, 1945, while he was sailing with Mrs. Cabot in Frenchman's Bay, near Ellsworth, Maine.

Dr. Cabot was born August 11, 1872, at Beverly Farms, Massachusetts. He received the degree of A.B. in 1894 and of M.D. in 1898 from Harvard University and of LL.D. in 1925 from Queen's University, Belfast, Ireland.

He practiced in Boston, where he was surgeon for the New England Baptist Hospital from 1900 to 1920. He was assistant surgeon and surgeon for the Massachusetts General Hospital from 1902 to 1920; was instructor in genito-urinary surgery at Harvard University from 1910 to 1912; assistant professor from 1913 to 1918, and clinical professor from 1918 to 1919. He was professor of surgery at the University of Michigan from 1919 to 1930 and was dean of the Medical School, University of Michigan, from 1921 to 1930. He entered the Mayo Foundation as professor of surgery in 1930, and was head of a surgical section in the Clinic until 1938.

Dr. Cabot was honorary lieutenant colonel, Royal Army Medical Corps from 1916 to 1919; was commanding officer, No. 22 General Hospital, British Expeditionary Forces, from 1917 to 1919; was four times mentioned in dispatches and was decorated Companion of the Order of St. Michael and St. George. Dr. Cabot was a member of many national medical societies.

### LAWRENCE C. INGRAM

Dr. L. C. Ingram, formerly of Zumbro Falls and Red Wing, Minnesota, died at Lake City, Minnesota, July 2, 1945, of Hodgkin's disease at the age of seventy-two.

Dr. Ingram was born at Perry, Illinois, October 2, 1872. He received his medical degree from Keokuk Medical College, Iowa, in 1903, and began practice at

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Zumbro Falls, Minnesota. He joined the Wabasha County Medical Society in 1904, and was elected president in 1908. After taking special courses in eye, ear, nose, and throat diseases, he moved to Red Wing in 1911 and practiced this specialty in the Red Wing Clinic until 1914.

In 1914 Dr. Ingram moved his family to DeLand, Florida, and in 1920 to Orlando. In 1937 he retired, his practice being taken over by his son, Hollis.

After his retirement, Dr. and Mrs. Ingram traveled extensively in the interest of his hobby, which was flower culture and Kodachrome pictures. As evidence of his ability, he was made president of the Orlando Men's Garden Club.

Dr. Ingram was a member of the American Academy of Ophthalmology and Otolaryngology, the American College of Surgeons, the Southeastern Medical Association, and the American Medical Association. He was also a life member of the Rotary Club and a deacon of the Park Lake Presbyterian Church of Orlando.

Dr. Ingram was married to Caroline F. Malchert of Lake City, Minnesota, July 23, 1903. Besides his widow he is survived by his son, Dr. H. C. Ingram, a captain in the 3rd Air Force at Avon Park, Florida.

Dr. Ingram became ill in April, at which time he entered Mercy Hospital in Chicago. His last days were spent at the hospital in Lake City, Minnesota, and he was interred at Lakewood Cemetery, Lake City.

### MABEL ULRICH

Dr. Mabel Ulrich, wife of Dr. Henry Ulrich of Minneapolis, died as a result of a fall from a cliff near her home at Otisville on the St. Croix River, Saturday night, August 11, 1945. Apparently she had walked off the edge of the cliff when returning home in the dark.

Mrs. Ulrich was born in Brooklyn, New York, in 1876. She was a graduate of Cornell University and received her medical degree from Johns Hopkins.

In World War I, Mr. Ulrich was regional director of the American Red Cross for Minnesota, North Dakota and South Dakota, and Montana. She served on the Minnesota State Board of Health at the time of World War I; was the first woman to serve on the Minneapolis Board of Public Welfare.

After World War I, Mrs. Ulrich established book stores in Minneapolis, Saint Paul, Duluth, and Rochester, which she conducted for more than ten years. She contributed regularly to the *Saturday Review of Literature*.

At the time of the WPA, Mrs. Ulrich was appointed state director of the Minneapolis writers' project, and edited the Minnesota edition of the *American Guide*, depicting the scenic, historical, cultural, recreational, economic and industrial resources of the state.

Mrs. Ulrich is survived by her husband, Dr. Henry Ulrich, and two daughters, Mrs. James Wise of New York and Mrs. Charles Spoerl of West Hartford, Connecticut.

# ♦ Reports and Announcements ♦

## CLINICAL ALLERGY COURSE

The School of Medicine of the University of Pittsburgh is offering a five-day orientation course in clinical allergy October 1 to 5 inclusive, at the Medical School in Pittsburgh under the sponsorship of the American Academy of Allergy.

The faculty is composed of fifteen outstanding allergists from Pittsburgh, New York, Philadelphia, Chicago and Saint Louis, who will instruct in the various manifestations of allergy.

The fee is \$40 for registrants, \$10 for servicemen and residents. Inquiries should be addressed to Dr. Wm. S. McElroy, Dean, School of Medicine, University of Pittsburgh, Pittsburgh 13, Pennsylvania.

## EXAMINATIONS OF CRIPPLED CHILDREN

Crippled children from forty-one counties will have the opportunity for orthopedic examinations and counsel for future care at nine district clinics to be held this fall by the Crippled Children Services of the Minnesota Division of Social Welfare. Clinics will be held each Saturday starting September 9, 1945.

The clinic schedule just announced by Jarle Leir-

fallom, director of the Division of Social Welfare, is as follows:

*Winona*—September 8, serving Winona, Wabasha, Olmsted, Fillmore, and Houston counties.

*Fergus Falls*—September 15, serving Ottertail and Wilkin counties.

*Marshall*—September 22, serving Lyon, Lincoln, Redwood, Yellow Medicine, and Lac Qui Parle counties.

*Bemidji*—September 29, serving Beltrami, Lake of the Woods, Clearwater, and Hubbard counties.

*Virginia*—October 6, serving St. Louis, Cook, and Lake counties.

*Little Falls*—October 13, serving Morrison, Todd, Crow Wing, and Mille Lacs counties.

*Mankato*—October 20, serving Blue Earth, Martin, Faribault, Waseca, Brown, Watonwan, Nicollet, Le Sueur, and Sibley counties.

*Crookston*—October 27, serving Polk, Norman, and Mahnomen counties.

*Willmar*—November 3, serving Kandiyohi, Swift, Meeker, Renville, Chippewa, and McLeod counties.

These clinics are part of a year-round program sponsored and financed by the state and federal government.

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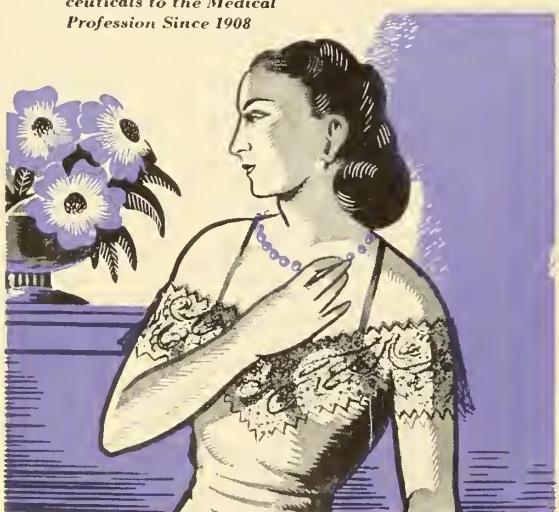
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The clinics are for crippled children and young people under twenty-one. It is advised that those attending the clinic for the first time bring a referral slip from their family physician.

The clinic staff includes two orthopedic surgeons, one pediatrician, a nursing supervisor, a public health nurse-physiotherapist, medical social workers, field nurses, local public health nurses, two medical stenographers, and representatives of the Division of Vocational Rehabilitation, Minnesota Department of Education.

Organizations co-operating with Crippled Children Services in Minnesota include the Minnesota-Dakota Orthopedic Society, the Northwestern Pediatric Society, the Gillette State Hospital for Crippled Children, the Division of Vocational Rehabilitation of the State Department of Education, the Minnesota Public Health Association, and the local Medical Society.

A total of 792 crippled children were examined at a similar series of clinics held this spring at nine other centers in the state.

## ASTHMA AND FORMATION OF HERNIA

(Continued from Page 728)

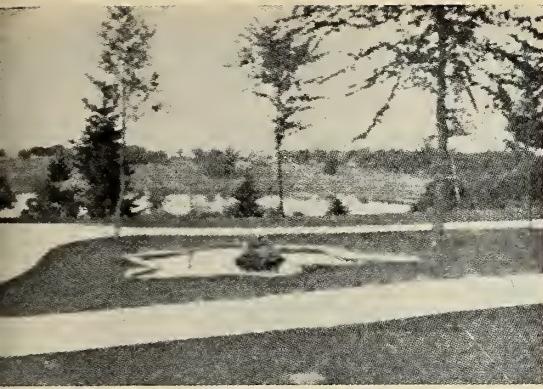
who were advised not to have their hernias repaired. The contraindications were pulmonary in origin (cough, asthma and emphysema) in only twenty-nine cases. Obesity contraindicated surgical repair in twenty-four cases, and in seventeen cases old age, heart disease, or severe diabetes were the contraindications.

In some instances, operation was merely postponed until the condition of the patients could be improved or it was delayed until a more favorable season when asthma would be minimal or nonexistent.

It is obvious that care must be exercised in choosing which patients having both asthma and hernia should be operated on; in addition, one must decide when to perform the operation. The pre-operative measures necessary in preparing patients with asthma for operation have been referred to in detail in previous reports from the clinic.<sup>2,4,5</sup>

## References

- Coryllos, P. N.: A new conception of the mechanics and physiology of cough. *M. Clin. North America*, 20:861-876, (Nov.) 1936.
- Gaarde, F. W., Prickman, L. E., and Raszkowski, H. J.: Is the asthmatic patient a good surgical risk? *J.A.M.A.*, 120:431-433 (Oct. 10) 1942.
- Guthrie, R. F., Olson, J. D., and Masson, J. C.: Results of the use of fascial and nonfascial sutures in hernial repair. *S. Clin. North America*, 23:1177-1189, (Aug.) 1943.
- Prickman, L. E., and Gelbach, P. D.: The incidence and prevention of postoperative pulmonary complications among patients suffering from asthma. *Proc. Staff Meet., Mayo Clin.*, 19:384-388 (July 26) 1944.
- Prickman, L. E., and Gelbach, P. D.: The symptomatic treatment of seasonal hay fever and asthma. *Proc. Staff Meet., Mayo Clinic*, 19:405-408, (Aug. 9) 1944.



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# ◆ Of General Interest ◆

Released from military service, where he was a captain in the medical corps, Dr. C. T. McEnaney has returned to his practice in Owatonna.

\* \* \*

Dr. and Mrs. Leonard T. Carlson, of Minneapolis, announce the birth of a daughter. The young lady, who arrived on July 10, 1945, has been named Lenore Marion.

\* \* \*

Governor Edward J. Thye has appointed Dr. E. Mendelsohn Jones, Saint Paul, to the Minnesota Board of Medical Examiners, to complete the unexpired term of the late Dr. Max Alberts, which is until May, 1949.

\* \* \*

Announcement has been made of the appointment of Dr. G. B. Eaves, of Wabasso, to a fellowship in urology at the University of Minnesota, beginning August 1. Dr. Eaves has been practicing in Wabasso since February, 1940.

\* \* \*

Dr. C. L. Sherman, of Luverne, was re-elected president, and Dr. S. A. Slater, of Worthington, was elected secretary-treasurer of the Southwestern Minnesota Sanatorium Commission at the annual meeting at Worthington in July. This will be Dr. Sherman's thirty-second term as president of the Commission.

Lieutenant Earl Anderson, former fellow in surgery at the Mayo Foundation, was killed in a collision of training planes near the Naval Air Station at Glenview, Illinois. Lieutenant Anderson was a flight surgeon in the Navy.

\* \* \*

Dr. Wallace P. Ritchie of Saint Paul was the principal speaker at the meeting of the Minnesota Society of Neurology and Psychiatry, held at the Minnesota Club, Tuesday evening, September 11. His subject was "Some Experiences While with the 26th General Hospital."

\* \* \*

The fluoroscope and x-ray machine, for which Dr. C. T. Wadd, Janesville, secured a priority a year ago, has at last been installed in his office and is in operation. One of the most powerful made for medical purposes, the machine is shockproof and all the mechanism operates on one dial.

\* \* \*

Dr. R. R. Hendrickson, on leave from the superintendence of Sand Beach Sanatorium, Lake Park, since 1943, has returned to his duties there. Under a major's commission Dr. Hendrickson has been serving as surgeon in reserve in the United States Public Health Service.

(Continued on Page 774)

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## OF GENERAL INTEREST

(Continued from Page 772)

Dr. E. O. Sarff, who has been on the staff of the Iowa University Hospital, Department of Urology, for the past year, expects to return to his home in Virginia and be again in practice shortly after October 1. While in Iowa City Dr. Sarff also did some postgraduate work in surgery.

\* \* \*

Dr. J. M. Thomson has returned to Minnesota, and is now associated with Dr. Paul N. Larson of Minneapolis, after completing three and a half years of graduate study in Obstetrics and Gynecology at the University of Chicago Lying-in Hospital and Cook County Hospital.

\* \* \*

After an absence of four years, Dr. Norman Lende is again in practice in Faribault. Dr. Lende, who returned from Panama ten months ago, where he had been in government service, was practicing in Glencoe during this time because of the acute shortage of doctors there.

\* \* \*

Dr. Lillian Nye of Saint Paul has been appointed head of the Health Service of the Mississippi State College for Women at Columbus, Mississippi, and has taken over her duties. Last spring she was appointed Assist-

ant Clinical Professor of Pediatrics at the University of Minnesota Medical School.

\* \* \*

Dr. M. I. Hauge has closed his offices at Clarkfield and moved to Minneapolis, where he will be with the Abbott Hospital for the ensuing year. During his absence his practice will be in charge of Dr. M. A. Borgerson, of Hanley Falls, who will also occupy Dr. Hauge's residence in Clarkfield.

\* \* \*

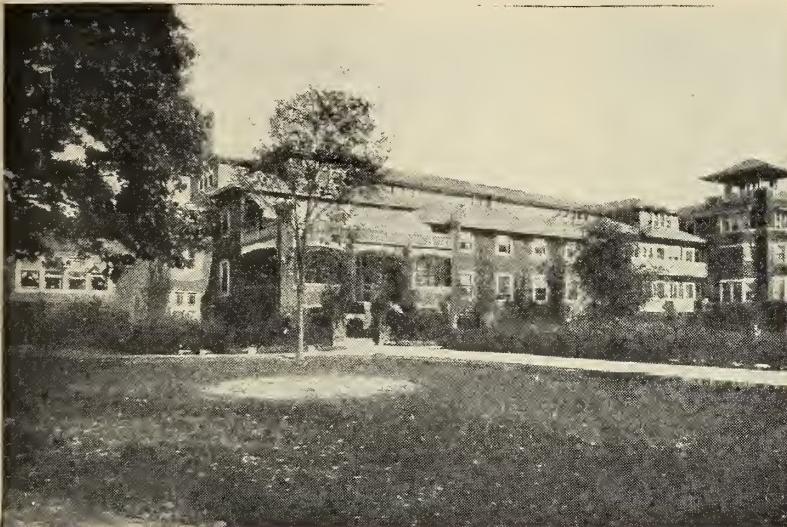
The Minnesota Association of Coroners elected Dr. John Ekblad, Duluth, president of the organization at their annual meeting in Saint Paul in July. Dr. Edwin Kilbride, Worthington, was made first vice president; Dr. R. H. Puumala, Cloquet, second vice president, and Dr. Russell R. Heim, Minneapolis, secretary-treasurer.

\* \* \*

Dr. William Johnstone, of Pittsburgh, is a recent addition to the staff of the Bratrud Clinic at Thief River Falls. Dr. Johnstone, who is a 1943 graduate of Northwestern University Medical School, served his internship at the Southern Baptist Hospital in New Orleans.

\* \* \*

Dr. Isadore Fisher, of Ceylon, who has not been in the best of health recently, on advice of his personal physician has closed his offices and retired from general practice for an indefinite period. With Mrs. Fisher



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and their daughters, he will live in Saint Paul where he has purchased a home. During his enforced rest Dr. Fisher expects to study for a Master's Degree.

\* \* \*

As a memento of Dr. W. H. Valentine's completion of forty-two years of practice in Tracy, his office assistants presented him with a bound register of the births he has attended since 1930. The total number listed is 2,924—1,470 boys and 1,454 girls. The number, however, is far from complete, as Dr. Valentine's records prior to 1915 were destroyed by fire in 1936.

\* \* \*

Dr. John G. Rukavina, of Hibbing, who received his medical degree from the University of Minnesota in June, 1944, has been made resident physician at St. Mary's Hospital in Duluth, where he served his internship. Dr. Rukavina also has a B.S. degree with distinction in education and an M.A. degree in education from the University.

\* \* \*

Dr. and Mrs. Alfred N. Bessesen, Minneapolis, entertained relatives and friends at their home on August 6 from three to five in the afternoon and seven to ten in the evening, in honor of their golden wedding anniversary.

Dr. Bessesen received his medical degree from Rush Medical College, and Mrs. Bessesen is a graduate of Northwestern University.

An oak-leaf cluster has been added to the Bronze Star which was awarded to Major J. R. Campbell last January. The second decoration was presented for "meritorious service in combat operations" performed since the first award.

Major Campbell, division psychiatrist with the Third Infantry in Germany, is a former fellow in neurology, Mayo Foundation.

\* \* \*

The Bronze Star has been presented to Lieutenant Colonel Isadore A. Feder "for meritorious service in operations against the enemy in the European theater," where he served as chief of medical service, 45th Evacuation Hospital, Semimobile, in France from June 17, 1944, to August 1, 1944. Lieutenant Feder was on assignment in internal medicine at the Mayo Foundation in 1943.

\* \* \*

Announcement has been made of a grant by the W. K. Kellogg Foundation of \$250,000 to the University of Minnesota Medical School for postgraduate instruction. This grant covers a period of five years and added to funds already earmarked for this type of instruction will greatly increase the facilities of the school in providing postgraduate courses to meet the needs of returning servicemen.

\* \* \*

Major J. D. Johnson, Saint Paul physician and surgeon, has been made chief medical examiner at the



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Army Separation Center at Camp McCoy, Wisconsin. Major Johnson entered the Army in 1931, was given a reserve commission in 1935, and was called to active duty with the CCC. Later in the same year he resumed his private practice. He returned to active military duty in 1941 and was eye, ear, nose and throat specialist at Fort Snelling for three years before going overseas with the Ninety-first General Hospital. He returned to this country last March.

\* \* \*

Dr. Lillian Olson, medical missionary in China, who was recently returned to this country after confinement in a Japanese prison camp, is reported as improving, although still confined to her bed at the home of relatives at Bertha. Dr. Olson, en route home, was in the Philippines when the Islands were taken by the Japs and she was imprisoned at Los Banos, near Manila, until released by American occupation. After her arrival in San Francisco, Dr. Olson was under hospital care for some weeks before she was able to continue her journey home to Minnesota.

\* \* \*

Dr. Hamlin Mattson of Minneapolis has reopened offices for the practice of Surgery and Diagnosis at 78 South Ninth Street, following honorable discharge from the Army of the United States. Dr. Mattson served as commander of the medical detachment of the Fourth (Minneapolis) Regiment of the Minnesota State Guard in 1942 and 1943. He was commissioned as a major in

the A.U.S. in 1943. The past year he has served as assistant Chief of the Surgical Service of Wakeman Hospital Center for the care of overseas wounded at Camp Atterbury, Indiana.

\* \* \*

Dr. Janet Watson, daughter of Dr. and Mrs. Percy T. Watson, of Bemidji, is studying for a second year on an advanced medical fellowship at the Thorndyke Memorial Laboratory, where she is doing research in blood diseases. Dr. Watson, who is on leave from her teaching at the Long Island Medical College of Medicine, recently won recognition as co-author with Dr. W. B. Castle of a paper published in *Proceedings of the Society for Experimental Biology and Medicine* on "Nutritional Macrocytic Anemia: Response to a Substance other than the Anti-pernicious Anemia Principle."

\* \* \*

Dr. N. O. Pearce, whose appointment as tuberculosis control officer in the Minnesota Department of Health was announced a short time ago by Dr. A. J. Chesley, executive secretary of the department, will direct the statewide tuberculosis program which has been made possible by the allocation of \$100,000 for this purpose by the U. S. Department of Public Health.

As explained by Dr. Chesley, the program is intended to supplement the work now being done under the direction of Dr. Walter C. Marley in the Division of Preventable Diseases, by the local health departments, and the Christmas seal organizations. Its objective is

disclosure of more cases of tuberculosis while in the early and more curable stage.

Dr. Pearce, a leader in tuberculosis work for many years, is director of social hygiene education in the State Division of Preventable Diseases. He was formerly president of both the Minnesota State Medical Association and the Hennepin County Tuberculosis Association.

\* \* \*

Dr. A. M. Ridgway, Minnesota's oldest practicing physician both in age and term of service, celebrated his fifty-fifth year in the medical profession on July 7. An 1890 graduate of the University of Minnesota, Dr. Ridgway was one of the first interns at the Minneapolis General Hospital. In his early days of practice in Annandale more than half a century ago, Dr. Ridgway's patients covered a wide countryside. He made his rounds over the rough rutty roads in a horse and buggy and performed more than one operation on a farmhouse kitchen table, his only light a flickering kerosene lamp.

Still on the job, Dr. Ridgway not only keeps regular office hours, but takes night calls, whatever the weather. Since 1930 he has shared the practice with a partner, Dr. L. H. Bendix, also a Minnesota alumnus.

\* \* \*

Dr. John Alexander Steward, M.S. in Surgery, University of Minnesota, 1931, and a fellow in surgery, Mayo Foundation, 1927 to 1932, died at Tucson, Arizona, on July 7. He was a veteran of both World Wars. In the first he served as a lieutenant in the Aviation Corps; in the present war he had the rank of major in the Medical Corps. He was honorably discharged last December after two years of service, because of failing health.

Dr. Steward was born on August 6, 1897, at Chattanooga, Tennessee. He graduated from the University of Virginia in 1932 with a B.S. degree, and received his medical degree from the University of Pennsylvania in 1926. Dr. Steward was on the staff of Pine Ridge Sanatorium at Chattanooga for many years. He was also chief of staff at Erlanger Hospital.

\* \* \*

The Board of Regents, University of Minnesota, has approved establishment of the University as one of the principal centers for the refresher courses designed to re-orient physicians from military to civilian practice, and accepted a gift of \$250,000 from the Kellogg Foundation to be used for this purpose over a period of five years.

The training, which will consist of three separate courses of eight weeks each, supplemented by hospital work, will be under the general supervision of Dr. William O'Brien, whose successful continuation program was instrumental in attracting the Kellogg grant. Most of the hospital courses will be conducted at Ancker Hospital in Saint Paul, with lesser programs at the University and Minneapolis General Hospitals.

In addition to assisting physicians who have been out of civilian practice from three to five years to get again "in touch," these refresher courses will provide

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invaluable training for the many young doctors who went directly from internships and residencies into military service and consequently have had no opportunity for civilian experience.

\* \* \*

The appointment of Dr. Martin Ruona to the staff of Shipman Hospital at Ely has been announced by the owners, Drs. H. N. Sutherland and J. P. Grahek.

A native of Ishpeming, Michigan, and a graduate of the University of Michigan, Dr. Ruona took his medical degree at Marquette University, Milwaukee. Immediately following internship at the U. S. Marine Hospital, Chantz Hospital, and Tuora Infirmary, operated by the U. S. Public Health Service at New Orleans, Dr. Ruona was commissioned an assistant surgeon in the Reserve Corps of the U. S. Public Health Service and assigned to the medical center for Federal prisoners at Springfield, Missouri. Further training led to his appointment as chief medical officer at the Federal Correctional Institution at Sandstone, Minnesota. Recently he was on temporary duty in Washington, D. C., and it was while there that he accepted the position of the Shipman Hospital.

Dr. Ruona is an honorary member of the East Central Counties Medical Society of Minnesota, the American Psychiatric Association, the American Association of Military Surgeons, the Medical Correctional Association, the American Prison Association, and the American Association for the Advancement of Science.

\* \* \*

Commander Stewart W. Shimonek, Saint Paul orthopedist, who was home on leave after eighteen months overseas, has returned to the Pacific Coast for duty at the Marine Base on Mare Island. Mrs. Shimonek accompanied her husband.

Commander Shimonek entered service at the Great Lakes Station in March, 1942. From there he was sent to Cuba, and was assigned to the Fourth Marine Division when it was organized in June, 1943. He was in action with this division in the Marshalls and the Marianas and later was attached to a corps hospital on Iwo Jima.

When interviewed, Commander Shimonek praised the work of the hospital corpsmen with enthusiasm. He described their daring tactics in getting the wounded back to the doctors and said that bringing them in was the really tough job in the war. The most outstanding medical accomplishment, in Commander Shimonek's opinion, is the shipping of whole blood from California in special iced containers. He said:

"I have actually checked the dates on the containers of this whole blood, and often it was at our disposal on Iwo Jima three days after it had been shipped from the States."

The commander said he also wanted to say a good word for Naval efficiency, which he considered was well exemplified by his being returned to the States on July 13, 1945, exactly completing his required eighteen months of overseas duty which began with his shipping out on January 13, 1944.

**Medical Equipment and Literature Requested**

The Medical and Surgical Relief Committee calls attention to the increasing number of appeals for medical assistance in postwar Europe. In the first six months of the year the Committee has sent overseas more than \$20,000 worth of medical and dental equipment. Total donations to date amount to over \$734,000.

In addition to its main purpose of supplying medical equipment, the Committee is again concentrating on the collection of medical and dental literature written within the past five years to be distributed among European professional men. Anyone who has access to such literature is urged to send it to the Medical and Surgical Relief Committee, 420 Lexington Avenue, New York City.

**Captain Ingalls Receives Bronze Star**

Captain Edgar G. Ingalls, Jr., of Minneapolis, Commanding Officer of Company "D," 107th Medical Battalion—Clearing Station and Hospital for the 32nd Infantry Division, has just been awarded the Bronze Star Medal for "heroic achievement" in connection with operations against the enemy in the battle of Leyte on November 19, 1944, while in Command of Company "E" of the same battalion.

On the occasion mentioned, Captain Ingalls whose medical unit was stationed near Pinamopoan Point and had become subject to devastating machine-gun fire during its operations, courageously effected the rescue of a wounded soldier in an exposed position and rendered him necessary medical attention. With further resourcefulness and vigor Captain Ingalls organized and directed evacuation teams for the removal of litter patients to a point of safety until he was finally able to effect the withdrawal of his unit. He has nothing but praise for the way his men conducted themselves during this critical situation and says that they are made of the stuff that is enabling us to win this war.

Coming overseas on August 1, 1942, Captain Ingalls joined the division in November of that year and has participated in all of its campaigns, on the famous "road back" in the bitter jungle fighting of Buna, Saidor, and Aitape, through the wild Ormoc Road of Leyte and finally in the epic struggle along the Villa Verde Trail of northern Luzon.

Captain Ingalls secured his M.D. and Bachelor's degree at the University of Minnesota in 1941 and left his practice in Minneapolis when activated at the beginning of the national emergency.

**Russell Spittler Promoted**

Promotion of Russell O. Spittler, United States Army Medical Department officer, has been announced to lieutenant colonel at Camp Howze, Texas.

Col. Spittler is a native of Waseca and practiced medicine in New Richland. He is now chief of Surgical Service in the Station Hospital at Camp Howze. After entering the service in October 1942, he was sent to Camp Howze and assigned as assistant surgical chief. His family is in Gainesville with him.

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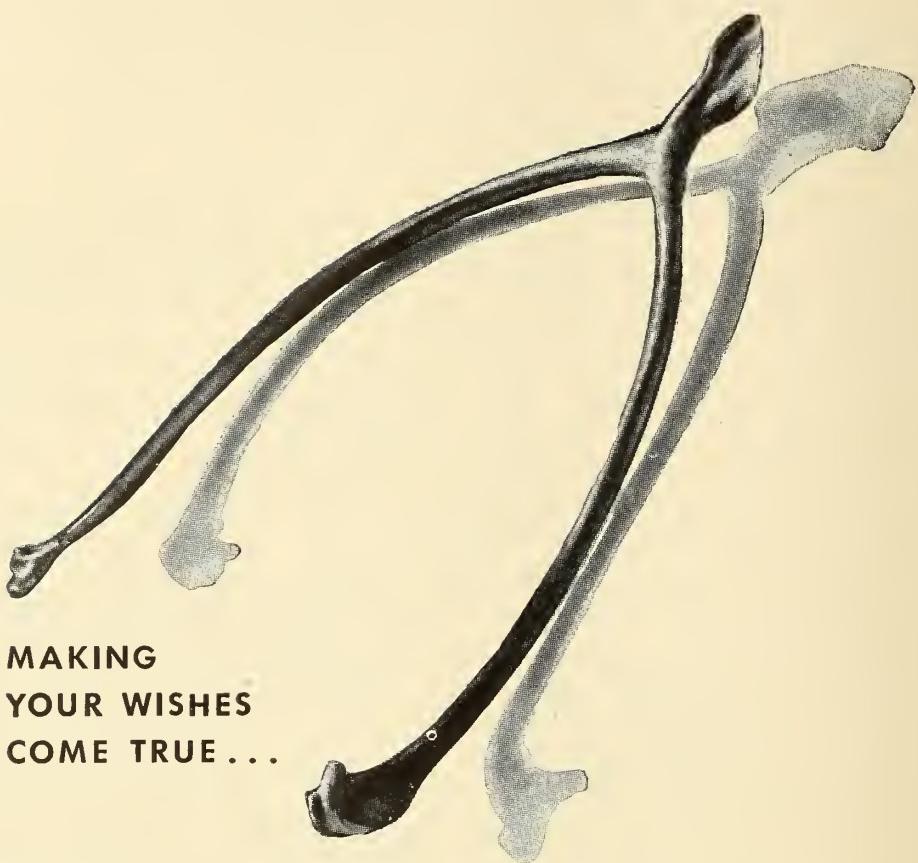
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**HOSPITAL NEWS**

Miss Marvel Curry, Waseca, has been appointed acting superintendent of the Waseca hospital, following the resignation of Superintendent Myrtle Kenvold, who left to take a much-needed rest. Miss Curry was a regular nurse on the hospital staff for seven years and for the past year and a half she has been on special duty and relief. Selection of a permanent superintendent awaits action of the Board, and Miss Curry's many friends are sponsoring her candidacy based on the fact that her experience merits serious consideration.

\* \* \*

Ninety persons attended the first annual banquet of the Nursing Advisory Committee of Fillmore County, held at the Town Hall in Preston on July 10. Mrs. Elvin Humble, Rushford, chairman of the committee, presided, and Dr. R. B. Johnson, Lanesboro, introduced the speaker, Dr. C. A. Aldrich, Director of Child Health Project, Mayo Clinic, who discussed the spoiled child.

The county is divided into five districts with two representatives for every township for the rural population and one for every three hundred persons in the villages. These representatives familiarize their communities with immunization programs and refer cases to the county nurses.

The committee was particularly pleased with the large attendance at the banquet, accepting it as evidence of growing interest in the public health nursing program.

**GERMAN DOCTORS UNDER NAZISM**

Shortly after V-E Day, Colonel Edward D. Churchill, Allied Mediterranean forces' surgical consultant, toured six German military hospital areas and reported his findings to American correspondents.

As we all know, American doctors' care of wounded in this war has been and continues to be phenomenal as regards its record-breaking percentages of cures and its development of new techniques and remedies. There was considerable expectation that the German doctors, what with German medicine's world-wide pre-Hitler fame and the well-known German thoroughness and energy, would have some pretty phenomenal achievements of their own to report from their war hospitals, once the Allies could crack into Fortress Europe and look around.

The Allies cracked in, all right; but Colonel Churchill did not find the phenomenal German medical achievements. His over-all conclusion after inspecting six German hospital areas was that German handling of wounded was about twenty years behind the American procedure.

Going into details, he reported that the German army doctors as a rule just casually passed up badly wounded

men on the assumption that they were going to die anyway, whereas our doctors fight to the last gasp for every wounded man's life, and frequently win; that the German physicians never had realized the maximum possibilities of blood transfusion, and used antiquated apparatus for what transfusions they did give; that as for professional pride in pulling off near-miracles of cure or amelioration, such pride just was not in the bulk of German military physicians and surgeons. By and large, they were victims of an apathy and a lack of ambition which would enrage a typical American doctor.

This is a sad backslide from Germany's once proud position as world leader in medicine and surgery. How did it happen? Are there any lessons in it for us?

It began to happen soon after Hitler saddled his brand of totalitarianism on Germany. It seems reasonable to conclude that it happened because Hitler saddled Nazi totalitarianism on Germany.

For one thing, in the Nazi philosophy, your race and politics mattered far more than your brains and talents. You might be a brilliant physician or surgeon or research scientist, but if you were a Jew or an anti-Nazi of any description, you had to get out of Germany if you could, or go to a concentration camp if you couldn't get out. Thus Hitler and his crew decimated German science. Their master-race convictions, too, led logically to such grisly perversions of scientific research as the use in some concentration camps of humans of "inferior" breed as guinea pigs for various laboratory experiments

Ruled by the politicians and browbeaten by Nazi gangsters, German medicine—on the strength of Colonel Churchill's findings, at any rate—withered, and in due time the German armed forces paid, in the form of bigger death totals, than they need have suffered.

The lesson in the German experience seems clear enough. It is that there is no substitute for a free, bold and inquisitive medical profession, or for generously financed and expertly staffed medical research, carried on year in and year out. It is devoutly to be hoped that the lesson of the German medical collapse will not be lost on us.—Editorial, *Colliers*, July 27, 1945.

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## BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

**CARBON MONOXIDE:** Its Hazards and the Mechanism of Its Action. Public Health Bulletin No. 290. W. F. von Oettingen, Principal Industrial Toxicologist, U.S.P.H.S. 257 pages. Illus. Price, 35c, paper cover. Washington, D. C.: U. S. Government Printing Office, 1944.

**EFFECTIVE LIVING.** Second Edition. C. E. Turner, A.M., Ed.M., Sc.D., Dr.P.H. Professor of Public Health, Massachusetts Institute of Technology; formerly Associate Professor of Hygiene, Tufts Medical and Dental Schools; formerly Director of Health Education Studies, Malden, Massachusetts; chairman Health Section, World Federation of Education Associations; and Elizabeth McHose, B.S., M.A., Director of Physical Education for Girls and Chairman of the Health Council, Senior High School, Reading, Pa. 432 pages. Illus. Price, \$2.00, cloth. St. Louis: C. V. Mosby Co., 1945.

**PSYCHIATRY IN MODERN WARFARE.** Edward A. Strecker, A.M., M.D., Litt. D., LL.D. Professor of Psychiatry and Chairman of Department, School of Medicine, University of Pennsylvania; Consultant for Secretary of War to the Surgeon-General of Army and Army Air Forces; Consultant to Surgeon-General of the Navy; Consultant to Surgeon-General U.S. P.H.S.; and Kenneth E. Appel, Ph.D., M.D., Sc.D., Assistant Professor of Psychiatry and Chief of Clinic, School of Medicine, University of Pennsylvania; lecturer in Psychiatry, School of Neuropsychiatry, U. S. Naval Hospital, Philadelphia; Medical Examiner for Armed Forces Induction Station, Philadelphia, etc. 88 pages. Price, \$1.50, cloth. New York: Macmillan Co., 1945.

**PENICILLIN THERAPY** (including Tyrothricin and other Antibiotic Therapy). John A. Kolmer, M.D., Professor of Medicine, Temple University; Director of Research Institute of Cutaneous Medicine. 303 pages. Illus. Price, \$5.00. New York: D. Appleton-Century Co., 1945.

This book is a timely résumé of the significant known facts pertaining to penicillin and other valuable chemotherapeutic compounds of biologic origin. By way of background, it covers the general characteristics of this group of agents, their production, assay, and antimicrobial activity *in vitro*, as well as their pharmacology and activity *in vivo*.

The discussion then enumerates those diseases which yield readily to penicillin therapy, those which do not yield, and those which yield only upon occasion or regarding which data is as yet inconclusive. Methods of administration and dosages are clearly indicated.

Considerable attention is paid to comparing the effectiveness of penicillin with other chemotherapeutic agents, notably, the sulfonamides; and the concomitant use thereof is discussed.

The book is concise, well written, and contains a large bibliography. It furnishes an excellent source of ready reference material on the subject.

M. O. WALLACE, M.D.

MINNESOTA MEDICINE

# Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

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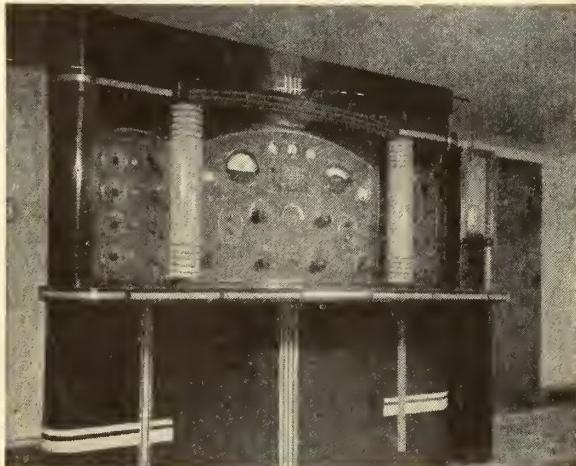
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# Minnesota Medicine

*Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota  
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Volume 28

October, 1945

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## ABUSE OF PROLONGED REST IN THE AGED

J. F. NORMAN, M.D.

Crookston, Minnesota

THERE are over 9,000,000 persons sixty-five years of age and over in these United States. This is an increase of 36.5 per cent among the elderly as contrasted with a 7.2 increase in the total population in the last ten years. This rapid increase of older persons in the population is due to life saving and disease prevention in the earlier years of their lives. The man of fifty to sixty-five years has no better expectancy than did his grandfather. Dublin<sup>4</sup> states that while the rate of invalidism for all the population is eleven per thousand for all ages, this increased to 53.5 per thousand at ages sixty-five to seventy-five years. The fact that these people lived to an advanced age is some proof that they had better than average natural resistance to infections and to early degenerative conditions.

The hospital and medical care of this large group with a high rate of invalidism brings up a problem of increasing importance. At present a large number of patients in our general hospitals are sixty-five years of age and over. Some of them enter in terminal conditions and will never leave the hospital alive. Others who are not so ill run the risk of becoming confirmed invalids by too prolonged stay in bed, whether for medical or surgical care. Soon they lack the will to make an effort to get up and around; they become hopeless in outlook and, in time, mentally deficient. Without some incentive to get back soon to work or home these patients deteriorate very rapidly. All these older patients do not enter a hospital because of disease conditions peculiar to their age. A number of them will enter with condi-

tions common to early life and old age, medical or surgical. Of such are the cases of acute appendicitis, acute cholecystitis, strangulated hernia, lobar pneumonia, and others. Accidents are common among older patients. Urinary infections occur often, due in men frequently to obstructive uropathy and in woman often to neglected cystocele due to old perineal lacerations.

While cancer is not now considered a disease peculiar to the very old it will constitute one of the common causes of entry of these patients into hospitals for care. The patient who is cachectic because of too long illness due to cancer will require longer hospitalization and because of the nature of the surgery may require long post-operative care. The same rule of less bed rest will apply, however, to these cases as usually they will do better if they are gotten out of bed early, whether or not the case is one where a cure is expected or where the operation is a palliative one.

The problem of caring for these older patients is an increasing burden on our rural hospitals. With such increase in numbers of older patients in local and metropolitan hospitals a renewed study of the subject may be in order. This is true for both surgical and medical cases. Such a review would perhaps clarify several questions on such care: (1) for the better care of the patient, and (2) the question of lessening the hospital burden.

In the two Crookston general hospitals 4,045 patients were admitted during 1944, with the average stay for all patients of 9.83 days. During the same period, 410 patients aged sixty-five

years and over were admitted, with an average hospital stay of nineteen days. Thus, these older patients required approximately twice as much hospital care as would an equal number of younger patients. It is understood that early rising does not always mean leaving the hospital earlier, but in the great majority of cases such early rising will shorten the period of convalescence and cut down the period of hospitalization. Cardiovascular renal disease accounted for 102 of these patients; cancer for thirty-three cases and respiratory conditions for thirty-five. Some of these cases overlap because of presence of terminal respiratory conditions. There were sixty-six deaths. These followed the usual pattern for this age group, and some of these deaths were from postoperative cardiovascular complications; cardiovascular conditions accounted for thirty-one deaths: cancer, seventeen; pneumonia, five; uremia, four; ulcers of the stomach, two; pulmonary thrombosis, acute appendicitis, cholecystitis, mesenteric thrombosis, diabetes and splenic anemia, each one; there was one death from accident. Some of these latter cases may come in as emergencies and will not allow for much pre-operative preparation. Other cases may be classed as elective as to time of operation for surgical conditions which will allow for better preparation.

With such aged patients entering our hospitals in increasing numbers it behoves the profession to reconsider the care of these people. There is a need for revision of our previous ideas of what constitutes proper care for all surgical and medical cases, and particularly, postoperative care. Respiratory and circulatory complications are rather too common during and following any bed rest. Many writers today stress the bad effects of prolonged bed rest. A review of such reports will disclose the fact that all are rather definitely in favor of shortening the period of bed rest. This is especially true in the case of older persons: the young seem to withstand such care better than the aged.

The custom of keeping patients in bed for long periods is a sort of tradition going back in the profession for forty years or more. With poor sutures and perhaps not so meticulous care in surgery, there was a reason for the fear on the part of both patient and surgeon that the surgical wound might break down before firm healing. The patient was rather tightly strapped, motion was limited, and he might be kept in bed three

weeks following such a simple operation as hernia. Early rising means that the patient is up the first or second postoperative day. The bed patient will have a lag period following this as wounds will not be as strong as on the first or second days. He will be up only for a short period the first time but this period will be increased daily and more movement allowed.

Many of these patients enter with definite handicaps due to conditions peculiar to their age group. A considerable number will suffer from nutritional deficiencies usually due to ignorance or too much "scientific" dieting urged by food faddists or insisted on by the patient for various reasons. Tuohy<sup>11</sup> has done much to rationalize the feeding of such old people and his advice may be followed in the hospital when the patient enters the physician's care. He has emphasized the need of an adequate and varied diet for these old people with enough protein to replace losses and enough other foods to supply energy and reserve. Such patients who have a liberal diet as part of their pre-operative care for elective surgery will be better surgical risks than will those without such care. In emergency cases there will not be time to improve a bad nutritional background, and so recourse will have to be had to plasma, blood transfusions and intravenous glucose with sufficient saline, before and after operation.

Stieglitz<sup>9</sup> states the most significant disorders in the aged are cardiovascular renal diseases, arthritis, diabetes and cancer. The cardiovascular condition may be very evident or it may become manifest as a postoperative complication. A distinct tendency to such complications exists in the aged and may manifest itself as coronary disease, thrombi, or edema of the lungs. It is felt that the great majority, perhaps 60 per cent or more, of patients over sixty-five years of age have some coronary disease. In a study of 100 cases by Freedberg and Lewis<sup>5</sup> of such old patients, sixty-three of them had significant coronary artery disease. All older patients should be handled as if they had some degree of coronary sclerosis. Every effort must be made to avoid shock which may predispose to postoperative myocardial infarction.

Postoperative complications will be more common in this group than for similar operations in younger patients. Mortality will be higher and there is always the possibility of prolonged mor-

bidity. Wilcox and Clagett<sup>13</sup> have reviewed this subject very well with a large number of cases from which to draw conclusions. They list 1204 patients over sixty-five years of age. A very great number of this group had some postoperative complication, such as thrombophlebitis, embolism, atelectasis or pneumonia. A significant number had renal or cerebral complications. Their mortality, 8 per cent, was low for such a group which included usual surgical conditions and operable carcinoma. Wangensteen<sup>12</sup> feels that surgery is relatively safe in elderly patients who are properly prepared, given pre-operatively a high protein, high carbohydrate and low-fat diet. He advocates a rigid postoperative regime and early movement and rising.

Ries<sup>8</sup> should be given much credit for his courage in advocating a change in the after-care of patients. This was in 1899 and his was a list of general surgical cases including all ages. He allowed most of his patients up the second day. The practice became popular in Europe and its use was extended. It is said that it was nowhere discontinued because of ill effects. For some reason, this practice lapsed during the late 1920's to be revived during the last ten years.

Older patients are inclined to be lethargic and this condition will be worse after too much narcotic medication. Once the older patient is up he will feel that there is some hope that he is going to get well and then will co-operate better. There are several advantages in early rising which many surgeons appreciate more as the plan is tried. Perhaps the urologists should be given more credit for getting their patients up early after operation. Prostatectomy was a serious operation and it was found that such patients had to be out of bed early or they would have a lessened chance for recovery. Other surgeons noted that older patients who disregarded orders and had gotten up the first night after operation convalesced rapidly and safely, with fewer complications. Wound rupture early or late was less frequent and accumulation of wound serum and wound infections were markedly less as were pulmonary complications.

No operation can be considered safe in the old-age patient; the mortality will be higher than in the younger age groups. The risk must be considered, whether the operation or the disease carries the greater risk. The mortality varies with the type of operation and experience of the op-

erator. Dock<sup>3</sup> has made the statement that bed rest claims more lives than all other therapeutic agents added together. He emphasizes the fact that "the hazards of cardio-circulatory pulmonary complications are greatest in patients well enough to be propped up in bed, often with legs flexed over a pillow or a bend in the mattress." He adds "that the danger is far greater in obese patients than in thin ones, in the elderly than in the young" and "that such complications have become one of the most frequent causes of death following operations, or during the medical care of chronic and acute diseases of the senescent and senile." He states that among elderly patients after days or weeks of bed rest, thromboses were demonstrated in one-fourth to one-half of a large series studied. It has been found that the onset of phlebothrombosis may be in the skin of the back of the leg or foot, extending later to the deeper veins; venous stasis completes the picture. Hypostatic broncho-pneumonia is perhaps the next most common complication of surgery of older patients; its onset is insidious and favored by bed rest.

Bowers<sup>2</sup> of New York City favors the early rising of his elderly patients, and early activity. He has found that this reduces complications following operation for carcinoma of the stomach. Fred W. Bailey<sup>1</sup>, St. Louis, urges the need to "shorten bed rest in the case of old patients and to return them to their normal environment at the earliest possible moment even at the price of permanent recovery. Controlled activity will favor and hasten early healing in the aged."

The time-honored treatment for heart disease has been rest in connection with the various medicines and this within limits is of great benefit to the cardiac patient. Long continued bed rest may be harmful in some of these cases and such ambulatory patients will often develop pulmonary râles and hydrothorax when kept in bed for a long time. Levine<sup>10</sup> states that in such cases peripheral edema may disappear but that the patient may have several liters of latent edema. Fluid has increased in the lungs where it is more dangerous; continuing bed rest in such patients may tend to increase dyspnea and pulmonary edema. He advises that such patients even with serious pulmonary edema should be allowed to sit up in a chair to allow some gravitation of fluid away from the chest.

Harrison<sup>7</sup> mentions the great value of bed rest

but feels that the subject of prolonged rest needs revision. This applies to rest treatment for cardiac disease, including coronary disease. He feels that a patient would have a more normal psychological life if he were up and about. Cardiacs kept in bed show an added incidence of pulmonary infarcts, hypostatic pneumonia and uremia. A series of studies in Vanderbilt University Hospital and later in the North Carolina Baptist Hospital seems to show that shorter bed rest for congestive failure cases had no higher mortality and the patients were happier.

Many older patients subject to senile bronchitis will develop an exacerbation of their condition which may rapidly become fatal with bed rest. This condition may appear after operations, the patient rapidly becoming toxic and dyspneic with lungs becoming edematous. Getting such patients out of bed will often change the course of their illness and recovery may be rapid.

Thewlis<sup>6</sup> believes that one of the best methods in the treatment of the aged is to keep such patients out of bed and that the ordering or urging of such patients out of bed is often a psychic stimulant; that such a patient will brighten up with marked physical improvement. He urges the same postoperative care for the aged surgical case as for the younger patients, so far as early movement in bed and early rising. Such patients, he believes, will do better no matter what type of operation, if out of bed the second or third day; elimination will be better and urinary retention may disappear.

Because of the many physical handicaps of these old-age patients no rule or procedure will be applicable to all cases and the physician will do well to be not too dogmatic in the handling of such cases. In a great majority of patients who are old and who need medical or surgical care, prolonged rest will be a definite hazard both from the point of view of their physical well being and also because of the very marked psychic changes which may take place with the result that they may be greatly handicapped. While prolonged rest is an abused therapeutic procedure, too early rising or too little rest may be dangerous in some old patients. It would seem that the profession should strive to arrive at a correct balance between rest and activity in therapy.

Contraindications are not many and are more or less self evident. The method cannot be applied to patients more or less bed ridden before

operation and each case must be evaluated before early rising is attempted. Shock, cardiac failure and pneumonitis would mean bed rest for the patient. Drainage of an abdominal wound may be a contraindication. Peritonitis or abdominal hemorrhage would make the method unsafe as would complications of the wound including contamination, infection, and dehiscence. Thrombi or emboli either present or feared and marked anemia or debilitation due to other causes would delay rising.

**Conclusions:** Prolonged bed rest may add to the risk in any illness of the aged who are already handicapped and many cardiovascular patients do better if out of bed early. Wound healing is more rapid with early rising after operation and wounds have fewer early or late ruptures; motion favors healing. There will be fewer pulmonary complications, and vascular accidents are markedly reduced.

In old people the use of urinal and bedpan is dreaded and early rising permits them to go to the toilet. Distention is lessened and urinary complications less frequent. The old patient is very happy to be up and feels that there is hope for his ultimate recovery. Early rising should mean early walking. Patients do not dread hospitalization if they know that they will not be kept in bed long.

The principle of little bed rest for the old patient should be adhered to in the patient who comes in for pre-operative conditioning. Such patient should be up and around as much as possible, have a proper diet and be out of doors if possible, even though it be by wheel chair.

## References

1. Bailey, Fred W.: Surgery of the aged. Am. J. Surg., 24: 487-500, (May) 1934.
2. Bowers, Ralph E.: The surgical treatment of carcinoma of the stomach in aged individuals. Surgery, 11:869-881, (June) 1942.
3. Dock, W.: Evil sequelae of complete bed rest. J.A.M.A., 125:1083-1085, 1944.
4. Dublin, L. I.: Statistic and social implications in the problem of our aging population in medical problems of old age. Philadelphia, University of Pennsylvania Press, 1941.
5. Freedberg, A., Stone, and Lewis, Herbert D.: The normal heart in old age. Cardiology, 231: No. 22, 1944.
6. Harrison, Trusley R.: Abuse of rest as a therapeutic measure for patients with cardiovascular disease. J.A.M.A., 125: 1075-1092, (Aug.) 1944.
7. Levine, S. A.: Some harmful effects of recumbency in treatment of heart disease. J.A.M.A., 126:80-84, 1944.
8. Ries, T. E.: Some radical changes in the aftertreatment of celiotomy cases. J.A.M.A., 33:454-456, 1899.
9. Stieglitz, Edward J.: The potentialities of preventive geriatrics. New England J. M., 225:247-254, 1941.
10. Thewlis, M. W.: The care of the aged, "Geriatrics," 4th Ed., St. Louis, C. V. Mosby, 1942.
11. Tuohy, E. L.: Feeding the aged. J.A.M.A., 121:42-48, 1943.
12. Wangensteen, O. H.: Abdominal surgery in old age. Journal-Lancet, 64:178-183, 1944.
13. Wilcox, L. E., and Glagett, O. T.: Surgical procedures on patients of advanced age. Proc. Staff Meet., Mayo Clinic, 16:795-800, 1941.

# THROMBOSIS AND EMBOLISM OF THE ABDOMINAL AORTA

CAPTAIN J. L. DIAMOND, MC, AUS

Fargo, North Dakota

SINCE the first description of thrombosis of the abdominal aorta by Graham in 1814, the clinical-pathological picture of this dramatic episode in medicine has been more widely recognized.<sup>1</sup> Although the number of reported cases has reached 180 in the past 130 years, it remains a relatively rare occurrence. Because of the grave prognosis and the value of early therapeutic intervention, it requires prompt recognition. A case illustrating thrombosis of the abdominal aorta is reported.

## Case Report

A fifty-year-old man was admitted to the hospital in a state of congestive heart failure. His past history was insignificant. He had had no previous hospitalization. His present illness began one year ago with dyspnea. He was given digitalis for a long period of time. He worked until four months before admission, when he fell and remained unconscious for four hours. He lost full control of his left hand following this incident. He remained in bed because of dyspnea and weakness.

At the time of admission, he complained of shortness of breath, pain and soreness over the upper right quadrant, fatigue and rheumatic pains in the right knee. Pertinent physical findings were: dyspnea at rest, slight cyanosis of lips, fine râles over both bases posteriorly, enlarged heart, weak shallow pulse, blood pressure of 90/50, and liver enlargement of three fingers breadth on the right. The extremities were cool and mottled. There was loss of motion of the fingers of the left hand. No murmurs were heard. Laboratory procedures indicated: heart occupied 57 per cent of the transverse diameter of the chest, erythrocytes 5,050,000, hemoglobin 100 per cent, leukocytes 8,400, sedimentation index 14 (Cutler), 2 plus albuminuria without cells or casts in urine, negative Wassermann, N.P.N. 32, blood sugar 100, and icteric index 10.7. The diagnosis of arteriosclerotic heart disease with myocardial insufficiency and peripheral vascular failure was made. He was given digitalis 3 grs. daily, codeine, aminophyllin, dry cradle heat and morphine. Four days after admission his diastolic pressure was unobtainable and the systolic fluctuated between 80 and 105. A rough systolic murmur was heard later over the entire precordium. The distal portion of the toes was red. The patient experienced moderately sharp pains in the left calf. Subsequently, the left leg swelled and measured 3 cm. more than the right. The leukocytes were 13,000

with 79 per cent neutrophils. The Takata-Ara was slightly positive. His symptoms were restlessness and insomnia. Embolization and subacute bacterial endocarditis were considered, although blood cultures taken then proved to be sterile later.

On the tenth hospital day his temperature rose, he complained of backache, chest pains and constipation. He became confused, had a weak pulse, and slight hemoptysis. He complained of pain in his lower extremities. The skin became cold, the pulse imperceptible and the blood pressure unobtainable. The following day he appeared somewhat brighter. His left leg, although edematous, became red. He complained of chest pains. His pulse was shallow, he became more confused, coughed considerably, appeared cold, clammy and semi-comatose. He expired on the fourteenth hospital day.

Autopsy was performed shortly after death. Pertinent features were: bilateral one plus pitting edema from knees to ankles, lividity of the lower extremities, atelectasis of upper portion of the right lung with soft gelatinous exudate over the entire lung, bilateral consolidation of the lower lobes, infarction two inches wide in posterior right lobe, although pulmonary thrombosis was not demonstrable. Petechiae were seen in the epicardium. There was no evidence of valvular damage or coronary sclerosis. No myocardial infarction was seen. The right auricle was dilated, the heart weighed 680 grams. The cirrhotic liver weighed 1,600 grams. The spleen and kidneys showed passive congestion. In the abdominal aorta there was an extensive, organized and adherent thrombosis which extended from the level of the diaphragm to the bifurcation and down into the left iliac. The thrombosis was 20.5 cm. in length of which 3 cm. extended into the left iliac artery. The width was 21 mm. at its greatest diameter. There were atheromatous plaques present throughout the aorta with no calcification noted on gross examination. There was another small thrombus about the size of a kernel of corn on the lateral aspect of the aorta at the level of the bifurcation, but this appeared to be independent of the massive thrombosis. The thrombus incompletely occluded the abdominal aorta.

## Discussion

Despite the number of cases reported, thrombosis and embolism occur infrequently. A survey of consecutive postmortems made in the city hospitals of Cleveland, Chicago, Brooklyn, and New York indicates that thrombosis and embolism of the abdominal aorta occurs approximately once in 1,000 autopsies.<sup>1</sup> Embolism is noted more frequently in females than in males, but thrombosis is more common in men. Although found in in-

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fants, they are most frequent in the fourth and fifth decades. Embolisms cause the greater number of occlusions. Embolisms are caused more frequently by auricular fibrillation and valvular



Fig. 1. Atherosomatous aorta with thrombus extending from 17.5 cm. above the bifurcation to 3 cm. down the left iliac.

heart disease, particularly in verrucous valvulitis, where auricular stasis accompanies mitral stenosis. Mural thrombi in dilated left auricles and ventricles during chronic failure less commonly cause embolism.<sup>2</sup> Mural thrombi have been found in one-third of all cases in which death followed heart failure, and have been found in two-thirds of hearts where myocardial infarction was present.<sup>2</sup> Rarely thrombi in the walls of the aorta, particularly the thoracic, may be responsible for emboli to distant points. Even the ball valve thrombus of the auricle may be a starting point for an embolus to the aorta.

Abdominal aorta thrombosis often follows arterial embolism as a secondary manifestation, but it may occur independently of embolic phenomena.<sup>3</sup> When thrombosis occurs independently of

embolism, atherosomatous degeneration and ulceration form the nidus for thrombus formation. In the largest series of cases reported, 36 per cent were of this category.<sup>3</sup> It has been found that thrombosis occurs predominantly in males fifty to eighty years of age. The average age in that series was sixty-two. These cases, like the one described above, are of the thrombo-arteriosclerotic type. Other etiological factors, however rare, may cause thromboses. These are abdominal aneurysm with mural thrombosis, or infections of influenza, diphtheria, streptococcus, syphilis and pneumococcus. Other precipitating factors are hemoconcentration of the blood and stagnation which may follow surgical or orthopedic maneuvers. In this respect, it is remembered that the velocity of a fluid in a tube is inversely proportional to the viscosity and directly proportional to the driving pressure to which it is subjected. Other rare precipitating factors are polycythemia, myeloid leukemia and extrinsic pressure from outside tumors.<sup>3</sup>

*Clinical Manifestations.*—The principal clinical manifestations are pain, fever, weakness, color changes, loss of reflexes, loss of sensations and of pulsation. Patients with subacute bacterial endocarditis, auricular fibrillation, congestive heart disease with mural thrombi, arteriosclerosis of the aorta, abdominal aneurysm and such infections which may cause areas of degeneration in the aorta thus acting as a focus for the formation of a thrombus are candidates for embolism and thrombosis of the abdominal aorta. The typical and more frequent symptoms are severe, sudden pains in the extremities, or radiation of abdominal pain into the lower back, groin or girdle area. Pain is the classical symptom. Pain varies in intensity and duration. It may be described as excruciating, stabbing, dull or aching. If the pain has a gradual onset, it indicates a gradually narrowing process. If pain is severe and constant, gangrene may accompany the clinical picture, depending upon the completeness of the occlusion and the extent of collateral circulation. Embolism causes sudden pain. If pain is gradual, slow and somewhat of a constant variety, thrombosis may be suspected.

Variations in coolness of the extremities are observed. If the obstruction is fairly complete, paresthesias, tingling, numbness follow. Color changes are described as black, cyanotic, blue,

white, pale, blanched or mottled. Often absence of pulsation in smaller arteries are to be found. In these cases the oscillometric index is zero. Associated with the temperature and color changes are disturbances of sensation which may accompany most cases of abdominal aorta occlusion.<sup>3</sup> Reflexes may be decreased or absent. Findings of changes more marked on one leg than the other indicate the presence of a saddle or rider's embolus. Weakness of extremities, loss of voluntary control of movements of the toes, and paraplegia occur in many cases. Loss of reflexes of lower extremities is another indicative finding. Herrmann<sup>2</sup> states that it is impossible to differentiate between embolism and thrombosis at the aortic bifurcation. However, gradual progression of symptoms occur more frequently with thrombosis, while embolic lesions cause sudden onset of agonizing pain, usually referred to both lower extremities. Gangrene, which might be expected in many cases, is not present except on rare occasions. This may be explained by the fact that the lesion, if completely occluding the major vessel—as it must in order to cause gangrene—causes circulatory failure and death.

When embolic occlusion of an artery is incomplete, diagnosis is more difficult. Similarly, since thrombosis occurs in a steady progressive manner, other phenomena must be eliminated before the diagnosis can be established conclusively. The differential diagnosis must exclude widespread venous thrombosis of both lower extremities, in which case pulsations are present, the limbs warm and edematous, the veins tender and sensation unchanged. Also to be excluded are: (1) ischemic necrosis seen in patients with advanced arteriosclerosis, (2) peripheral vascular disease, such as thrombo-arteriolclerosis of the lower extremities, (3) Buerger's disease; (4) coarctation of the aorta, and (5) scleroderma. Failure in diagnosis may be due to frequent absence of classical symptoms of pain, temperature and color changes, loss of sensation, skin sensitivity reduction, weakness of extremities and loss of reflexes. This may be due to the formation of an occluding thrombosis of the aorta immediately before death. Failure may also be due to a lowered threshold of pain and lack of sufficient time for visible changes to occur. It must be remembered that an incompletely occluding embolus gives rise to secondary aortic thrombosis.<sup>2</sup>

*Treatment.*—If treatment is to be of value, diagnosis must be made early. Only in embolism is surgery indicated. Surgical interference depends upon early diagnosis and localization of the embolus. Prompt embolectomy may be accomplished most successfully only within the first six hours, must be performed within twenty-four hours after the accident.<sup>2</sup> There have been several reported cases in which surgical intervention has resulted in the saving of a life. However, since the advent of anticoagulants, treatment is predominantly medical. Heparin must be used promptly, before the secondary thrombosis takes place, if embolism is present, and as soon as possible after an embolus has lodged to prevent development of thrombosis. Dicumarol can be employed as an adjunct anticoagulant. It is of prophylactic value in cases of rheumatic heart disease with auricular fibrillation, where embolization at the aortic bifurcation is anticipated. Recovery following the use of anticoagulants has been reported.<sup>3</sup> Because thrombosis follows embolization, it is imperative that heparin and dicumarol be employed promptly. When one considers that these anticoagulants prevent further enlargement of the thrombus and embolus, it is important to begin treatment as promptly as the diagnosis is established. Prevention of extension of an occluding blood clot may make for a spontaneous recovery.<sup>2,3</sup> Watchful waiting should be employed only when there are signs of a progressively improving circulation. Demarcating gangrene may be treated subsequently by amputation.

It is imperative, because of the high mortality rate, that all available medical means be employed. In addition to anticoagulants, therapy should include large doses of vasodilators such as papaverine (which is preferably given intravenously), aminophyllin, morphine and whisky. Digitalis and other opiates have been used routinely. The oscillation bed, a form of passive vascular exercise, has been introduced by L. G. Herrmann successfully.<sup>2,3</sup> Other treatments have included dry heat over the involved area, increase in fluid content (since an excessive concentration of plasma protein favors the inception of a thrombus), Buerger's exercises, partially occlusive bandages, paravertebral sympathetic block to relieve vascular spasms distal to the arterial obstruction and lumbar sympathectomy. Medical care must include treatment of the cardiac disease which is the etiological factor in many cases

of thrombosis and embolism of the abdominal aorta.

*Prognosis.*—The prognosis is always grave. Of the 180 cases recorded to date, over 90% were fatal.<sup>1</sup> Death occurs several hours to several months after onset of symptoms. Those recovering develop either collateral circulation without surgical intervention or dislodgment of the embolus into one of the smaller arteries, with resulting amputation of a part of the extremity.<sup>1</sup> In the largest group of occlusions of the abdominal aorta, the average duration of life was ten days.<sup>3</sup>

### Summary

1. A review of the subject of thrombosis and embolism of the abdominal aorta indicates that this is a rare occurrence. Nevertheless, the diagnostic manifestations form a definite clinical pattern

which must be recognized early since prompt medical and surgical intervention affords the only possible means of saving a life.

2. The etiological criteria as well as the differential diagnoses must be borne in mind in the prophylactic approach to this problem.

3. A case of extensive thrombosis of the abdominal aorta is presented. The atherosclerotic plaques on the aorta formed a nidus for the development of the thrombosis. Survey of the literature indicates that the thrombus was one of the largest ever reported.

### References

1. Greenfield, I.: Thrombosis and embolism of the abdominal aorta. *Ann. Int. Med.*, 19:656, 1943.
2. Herrmann, G. R., Willis, J. G., McKinley, W. F., and Karotkin, L.: Embolism and secondary thrombosis of the bifurcation of the abdominal aorta. *Am. Heart J.*, 26:180, 1943.
3. Reich, N. E.: Occlusions of the abdominal aorta. A study of sixteen cases of saddle embolus and thrombosis. *Ann. Int. Med.*, 19:36, 1943.

## CONGENITAL ATRESIA OF THE BILIARY TRACT

R. E. NUTTING, M.D. and ARTHUR H. WELLS, M.D.

Duluth, Minnesota

Since nearly one-fourth of the infants with congenital agenesis, atresia or stenosis of the biliary tract are subject to surgical correction of their condition<sup>17</sup>, it is essential that physicians caring for newborn infants recognize and properly care for the victims of this otherwise fatal malady.

### Case Report

This full-term, white, female infant weighed 8 pounds 8 ounces or 3,865 grams. She was delivered by mid-forceps on March 30, 1945, and died on April 7, 1945. There was no jaundice or other observed abnormality at the time of birth. Jaundice developed after two days and rapidly became very intense. The skin became a remarkable greenish-yellow color, not at all like the color of icterus neonatorum. The stools were yellowish-white in color and loose. She took feedings well and cried easily and frequently. Her skin was very sensitive to touch. On April 5, 1945, it was noticed that there was subcutaneous edema about the face, abdomen and legs. This edema gradually became more marked so that the skin became tense and firm over the abdomen, upper legs and back. The liver and spleen were not significantly enlarged to palpation. The abdomen became distended and tense. During the last twenty-four hours the child vomited all fluids by mouth and she became very weak. This weakness was progressive until death, one week after birth.

Laboratory studies revealed much bile in the urine but only a trace of urine urobilinogen. The icterus index reached 160 and the quantitative van den Bergh 17 mgs. per cent. A qualitative van den Bergh was of the immediate direct type. Blood serum proteins were: albumin 2.18 grams per 100 c.c. and globulin 0.96 grams per 100 c.c. There were 6 erythroblasts per 100 white blood cells at the time of birth and this fell to 2 per 100 white blood cells at the end of one week. Both the mother and baby were Rh positive. The red blood cell count was 5,010,000 and the hemoglobin 15.0 grams. The white blood cell count gradually rose from 3,900 to 12,300. The differential count was essentially normal. Blood urea nitrogen was 54.8 mgs. per cent and creatinine 1.8 mgs. per cent. Stools were not examined for bile or urobilinogen. A flat film of the chest and abdomen revealed no significant abnormalities. The child was given a 60 c.c. blood transfusion and penicillin. She was never considered ready for exploratory laparotomy; however, the diagnosis of atresia of biliary ducts was considered certain.

*Autopsy.*—The essential findings at the postmortem examination were those of an atresia or agenesis of the extrahepatic bile ducts and gall bladder, a severe cirrhosis of the liver with hyperbilirubinemia, hypoproteinemia with general anasarca and a mild sterile peritonitis (bile). The liver weighed 200 grams, twice its normal weight, and was a deep green throughout. Its outer and cut surfaces (Fig. 1) had a fine pebbly appearance of cirrhosis with a greater amount of interlobular fibrosis apparent near the hilum. A careful

From the Department of Pathology, St. Luke's Hospital, Duluth, Minnesota.

dissection led to the findings of an apparent complete absence of the right hepatic and common ducts while the left hepatic duct was represented by a delicate fibrous cord in which a few epithelial cells were found, histologically. The rudimentary gall bladder had no

the gut so that in an 8 mm. embryo it is only connected with the intestine through a narrow cord of cells which are later to become the extrahepatic biliary ducts. Most authors believe that



Fig. 1. Obvious surface scarring (cirrhosis) of the liver.

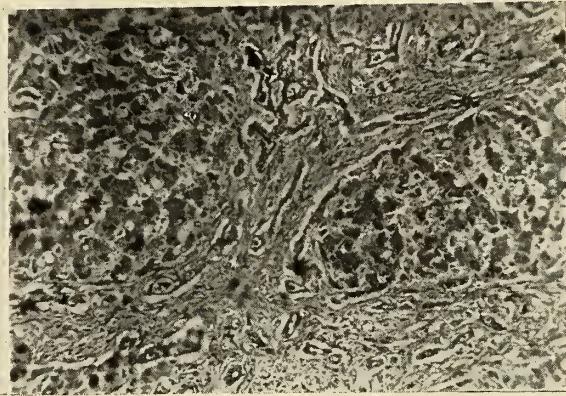


Fig. 2. Extensive scarring in portal areas with bile duct proliferation and stasis of inspissated bile in ducts.

lumen and the cystic duct was a delicate fibrous cord which disappeared in the adjacent loose connective tissue. There were no large bile ducts in the hilar area of the liver. The papilla of Vater was present and had an atristic common duct which could be traced 1 cm. The duct of Wirsung was found to empty into the ampulla of the papilla apparently without being obstructed.

Histologically, extensive deposits of inspissated bile was demonstrated in bile ducts, canalicular and cytoplasm of liver cells in all sections (Fig. 2). There was rather severe cellular fibrosis throughout the portal areas forming a network isolating many liver lobules. There was practically no inflammatory cell reaction. Mild toxic changes were evident in liver cells. There was a chronic passive congestion of moderate grade in the spleen. Bile casts were found in kidney tubules.

### Etiology

Of the variety of theories concerning the etiology of atresias of the biliary tract, those dealing with defects in embryologic development are by far the most logical and generally discussed. The liver is the first gland of the digestive tract to appear. It is in the embryo of 3 mm. length.<sup>1</sup> There is a longitudinal evagination from the ectoderm of the gut in the duodenal area. The cephalic portion of evagination is solid and designed to become the liver or pars hepatica. The caudal portion, the pars cystica is hollow, its cavity continuous with the lumen of the gut. From this part, the gall bladder and extrahepatic ducts arise. Beginning at both ends the evagination constricts itself from

the extrahepatic ducts lose their patency through epithelial proliferation to become solid cords only to later redevelop their lumina. It is not difficult to imagine a cessation of embryologic development at any point in the process similar to the atresias and stenoses which have been theorized in the closely related intestinal tract and elsewhere. As to the reason behind this cessation of normal development and maturation, it is explained that there are two major harmonious factors ("double assurance") which are known to insure complete development of a part of the body. One of the major factors is an intrinsic predisposition within the primitive cells to undergo specialization and is sometimes referred to as cell-competence and the other major factor is an induction stimulus of a chemical nature elaborated by certain previously specialized cells ("organizers"). A good example of an "organizer" is the effect of the outgrowing optic vesicle upon transplanted ectodermal cells from any part of the body surface, which transplant will regularly differentiate into the lens of the eye. Moolten<sup>20</sup> feels that the evidence strongly favors a defect in cell-competence in cases of congenital atresia of bile ducts, inasmuch as the anomaly consists of a simple failure of development and does not have the anomalous overgrowth and anachronisms of maturation seen in the dysfunction of "organizers." The latter dysfunction is thought to result in polycystic disease of the liver.

Strongly favoring an inherited developmental anomaly is the fact that Sweet<sup>25</sup> and Hopkins<sup>14</sup> separately reported families in which three children died with biliary atresia. There are six instances in the literature where two cases occurred in a family. Furthermore, associated congenital defects are occasionally noted.<sup>23</sup> One of binocular twins may have biliary atresia while the other remains healthy, making it highly improbable that toxins from the mother are of etiologic importance.<sup>28</sup>

Other theories of etiology mentioned in the literature are: (1) a catarrhal inflammatory process of the liver, descending into the bile ducts and causing their complete occlusion; (2) toxins absorbed from the mother injuring the liver and bile ducts of the fetus; (3) syphilis; (4) mechanical traction of the mesentery, twisting the ducts; (5) fetal peritonitis with adhesions and constriction of ducts; and (6) abnormalities in vascular supply resulting in the deformity of the duct. According to Mentzer<sup>19</sup> the wide variety of anomalies of the biliary tract occurring in about 10 per cent of all persons represent the normal arrangements found in lower animals. Certain anomalies may represent atavistic changes.<sup>11</sup> A knowledge of these variations in comparative anatomy of the biliary tree would indeed be essential to the surgeons.

### Pathologic Anatomy

Although there are numerous variations possible in the stenotic and atristic lesions of the biliary ducts, Ladd feels that these can be classified into eight general groups. These include: (1) agenesis of the extrahepatic bile ducts; (2) complete or segmental atresia of the hepatic ducts; (3) complete or segmental atresia of the choledochus; (4) complete or segmental atresia of the gall bladder and cystic ducts with patency of the common and hepatic ducts; (5) complete or segmental atresia of the cystic and hepatic ducts—the most frequent type; (6) atresia of the extrahepatic bile ducts with patency of the cystic duct and gall bladder; (7) agenesis of the extrahepatic ducts with the gall bladder connected directly to the duodenum and (8) mechanical obstruction of the patent bile ducts due to plugs of mucous inspissated bile, stones and inflammatory reaction in the ampulla of Vater. Of great practical importance are those cases in which the common hepatic duct or the hepatic and cystic

ducts and gall bladder are patent so that the bile reaches the outside of the liver and can be surgically delivered into the intestinal tract. The almost universally present cirrhosis of the liver is generally considered a biliary cirrhosis resulting from stasis of bile. It is conceivable that this portal fibrosis and proliferation of bile ducts is at least partially due to an abnormality in the congenital development, possibly a defect in the "organizer" factor, the "organizer" being the liver cells.

### Pathologic Physiology

Careful chemical measurements of physiologic processes as reported in the literature on this subject, are very spotty and incomplete. However, there is sufficient information to make it quite obvious that a wide variety of liver functions are affected by the disease. As is the case in other liver diseases, the various functions may be affected to varying degrees in different cases. The principal disturbances in the physiology of liver function have been recorded as the result of: (1) excretion of bile pigment; (2) secretion of bile salts; (3) disturbance of protein metabolism; (4) blockage of portal venous flow; (5) disturbances in hematopoiesis.

The failure of excretion of bile pigment results in the principal clinical feature, jaundice. This retention of bile pigment has all the characteristics of a mechanical block and in the completely obstructed cases one can expect to find high grades of hyperbilirubinemia, not more than traces of urobilinogen in the stool and urine, large amounts of bilirubin in the urine and a high per cent of bilirubin of the direct van den Bergh type as compared with a low quantitative van den Bergh of the indirect type. The absence of bile salts in the intestinal tract has resulted in the frequent observation of large amounts of fat in the stool. This has amounted to, according to Cole<sup>5</sup> and Striver<sup>20</sup>, as much as from 75 to 85 per cent of the fat ingested. The commonly observed simultaneous obstruction of the pancreatic duct of Wirsung would undoubtedly accentuate the various defects in digestion and could have some possible bearing on the advisability of an attempted surgical cure. Bleeding is a very common clinical manifestation and may well be related to a prolonged prothrombin time as the result of failure of absorption of vitamin K because of lack of bile salts in the intestinal tract. It

may also be related to the defective function of degenerated liver cells upon the vitamin K which is absorbed. The commonly observed slowed pulse and leukopenia are very likely clinical manifestations of retention of bile. The occasionally recorded retention of urea nitrogen as in our case probably relates to injury of kidney due to bilirubin excretion.

The extremely low blood serum proteins in our patient (albumin 2.18 and globulin 0.96 grams per hundred c.c.) is probably primarily the result of diffuse liver cell injury with improper protein metabolism. Since our patient only lived one week, the poor absorption of proteins from the intestinal tract could not have played a very important part in this serious protein deficiency. The commonly described<sup>3,5,26</sup> exodus due to terminal infections may be in part related to the disturbed protein metabolism. The frequent manifestations of bleeding may also be in part due to lack of prothrombin and fibrinogen, products of liver cell activity. It is very likely that the general anasarca observed in our patient was the result of the extremely low serum proteins.

Obstruction of venous return throughout the portal system by cirrhosis of the liver may in part account for ascites and is certainly the cause of an unusual development of the various means of collateral circulation shunting the portal blood around the liver. The exact cause of the commonly recorded low grade anemia is not established but could be related to liver cell dysfunction.

### Clinical Identification

Except for the speed of onset of the universally present jaundice, the rapidity of progress of the disease, and the time of exodus, the symptoms and signs of biliary atresia of the newborn are fairly consistent. Icterus may be present *in utero* but more often develops after birth, anytime within the first three weeks. This delay is sometimes explained by the fact that there is little bilirubin formation *in utero* and that after birth there is the possibility of storage of considerable bile pigment in the liver and other tissues before clinical manifestation of jaundice occurs. In those cases where there is only a partial stenosis of the bile ducts (which are relatively few) jaundice may be considerably delayed, but once developed could last for many years into adult life.<sup>14</sup> Once jaundice begins, in the majority of

cases, it increases to an extreme degree rapidly. There is a remarkable yellowish green color of the skin not seen in the more common cases of jaundice of the newborn. Our patient appeared to have a hypersensitive skin and had the frequently manifested hyperirritability. Apparently there is very little itching of the skin, which is so characteristic of this type of jaundice in later life. Gastro-intestinal disturbances are frequently recorded, such as diarrhea, watery stools, constipation, intestinal distention, intestinal colic, anorexia and vomiting. The stools may have a yellowish tint, particularly shortly after birth, but soon become clay colored. Quantitative urobilinogen or other accurate bile pigment analyses of the stools are essential in proving the presence or absence of bile pigment. However, they have not been recorded in the literature of this disease. The liver is generally enlarged to palpation and frequently there is a splenomegaly. The intensity of jaundice has been described<sup>15</sup> as varying considerably from day to day. However, bilirubin studies of the blood would probably reveal a stationary or gradually increased amount of this pigment in the blood. In one case there was reported clubbing of the fingers and toes.<sup>25</sup> Poor nutrition has been frequently observed in the patients living for longer periods of time. The average length of life is from five to six months but is extremely variable from a few days to over a year.<sup>6,8</sup> Terminal inflammatory conditions, particularly bronchopneumonia, pyelitis and upper respiratory tract infections are frequent.

A liver biopsy using the Silverman needle would almost uniformly reveal cirrhosis of the liver and retention of inspissated bile in the bile ducts, which finding would be practically pathognomonic of biliary obstruction. The biopsy should not be performed if there are clinical evidences of a bleeding tendency or if the prothrombin time is prolonged.

A differential diagnosis must include, icterus neonatorum, erythroblastosis fetalis, congenital hemolytic icterus, and severe sepsis with icterus. Excepting in those rare cases of icterus gravis in which there is extensive liver damage, all of these conditions should be easily differentiated from biliary atresia by the quantitative urobilinogen studies. Icterus gravis must be differentiated immediately by the Rh typing of the parents and infant, Rh agglutination, coagulation, and block-

ing tests of the mother's blood and the nucleated red blood cell percentage and red blood cell counts on the infant. Congenital hemolytic icterus is said to be extremely rare in newborn infants but when present should be characterized by the spheroid, hyperfragile red blood cells of this disease. Acute and chronic hepatitis and syphilitic hepatitis, both very rare in the newborn, may generally be ruled out through determination of urobilinogen content of the stool and urine and tests for syphilis in the parents and child. A liver punch biopsy as mentioned above would be very helpful. Conditions causing mechanical obstruction of bile ducts including tumors in and adjacent to the ducts, enlarged lymph nodes, due to infections<sup>9</sup> or tumors of the liver may be impossible to rule out excepting through surgical exploration.

### Treatment

Ladd<sup>16</sup> gives credit to Thompson<sup>26</sup> and Holmes<sup>13</sup> for popularizing the surgical potentiality of congenital atresias of bile ducts, but it remained for Ladd to surgically cure the first infant with the condition. Since then there have been many additional cures.<sup>2,7,9,22,27</sup> It is generally agreed that when the diagnosis of congenital atresia or stenosis has been made, exploratory laparotomy is indicated. It is agreed that the patient should be prepared by the use of high carbohydrate, high protein and a low fat diet. Vitamin K and bile salts are indeed indicated along with determinations of prothrombin time. The age at which operation is most likely to be successful is generally considered to be shortly after the first month of life. By this time the bile ducts are large enough to be visualized and, in most cases, the infant's general condition has not deteriorated significantly. The principal aim of the surgeon is to find a common hepatic duct, gall bladder, or common duct distended with bile which can be anastomosed either to the duodenum or stomach. Hicken<sup>12</sup> advised visualization of the biliary tract by the hypodermic injection of opaque media during the operation. In spite of an obvious cirrhosis of the liver, Ladd feels that the regenerative power of the liver cells is sufficient after the release of the obstruction to develop into a normally functioning liver.

### Summary

1. The case of a newborn infant with congenital bile duct atresias living seven days and

dying with severe hyperbilirubinemia, hypoproteinemia, general anasarca and cirrhosis of the liver has been described.

2. Suggestions have been made concerning the potential usefulness of studies of quantitative urobilinogen of the stool and urine and of the punch liver biopsy for the early diagnosis of congenital biliary atresia.

3. A review of various facts and theories as derived from the literature has been briefly covered.

### References

1. Arey, L. B.: *Developmental Anatomy*. 3rd Ed. P. 206. Philadelphia; W. B. Saunders Co., 1935.
2. Baker, H.: Congenital atresia of the bile ducts. Report of a case and review of recent literature. *Canad. M. A. J.*, 41: 130-134, (Aug.) 1939.
3. Bilderback, J. B., Bueermann, W. H., and Goodnight, S. H.: Congenital malformation of bile ducts. Report of case with severe hemorrhagic manifestations with recovery. *Northwest Med.*, 36:111-113, (April) 1937.
4. Bruchsaler, Fred S.: Congenital absence of the gall bladder and obliteration of the extrahepatic bile ducts. Report of a case. *Arch. Ped.*, 56:731-737, (Nov.) 1939.
5. Carter, Franklin R., and Collins, Harold L.: Anomalies of the bile ducts. Report of two cases with operations and autopsies. *Am. J. Dis. Child.*, 58:150-161, (July) 1939.
6. Cole, Warren H.: Congenital malformations of the intestinal tract and bile ducts in infancy and in childhood. *Arch. Surg.*, 23:820-847, (Nov.) 1931.
7. Conklin, Courson Baxter: Congenital atresia of bile ducts. *Internat. Clin.*, 4:215-220, 1928.
8. Croswell, C. W.: Congenital anomaly and extrahepatic ducts of the gall bladder. *J. Tennessee M. A.*, 27:316-318, (August) 1934.
9. Deaver, J. M. Montgomery: Congenital absence of gall bladder and extrahepatic ducts. *Am. J. Dis. Child.*, 46:356-358, (August) 1933.
10. Donovan, Edward J.: Congenital atresia of the bile ducts, 106:737-744, (Oct.) 1937.
11. Gordon, William C., and Dragutsky, David: Congenital absence of the gall bladder and cystic duct. Report of a case. *J. Lab. & Clin. Med.*, 27:594-597, (Feb.) 1942.
12. Hicken, N. Frederick, and Crellin, Henry G.: Congenital atresia of the extrahepatic bile ducts. *Sur., Gynec. & Obst.*, 71:437-444, (Oct.) 1940.
13. Holmes, J. B.: Congenital obstruction of bile ducts. *Am. J. Dis. Child.*, 11:405, (June) 1916.
14. Hopkins, N. K.: Congenital absence of the common duct. Three cases in one family. *Journal-Lancet*, 61:90-91, (March) 1941.
15. Kirshbaum, J. D.: Congenital absence of the gall bladder and the extrahepatic bile ducts. *Am. J. Dis. Child.*, 47: 1080-1086, (May) 1934.
16. Ladd, W. E.: Congenital atresia and stenosis of the bile ducts. *J.A.M.A.*, 91:1082-1085, (Oct. 13) 1928.
17. Ladd, W. E., and Gross, J. E.: *Abdominal Surgery of Infancy and Childhood*. Philadelphia: W. B. Saunders Co., 1941.
18. Laboe, Edward W.: Congenital absence of bile ducts. *J. Indiana M. A.*, 27:373-376, (Sept.) 1934.
19. Menter, Stanley H.: Anomalous bile ducts in man. *J.A.M.A.*, 93:1273-1277, (Oct. 26) 1929.
20. Moolten, Sylvan E.: Pathogenesis of congenital anomalies of the intrahepatic and extrahepatic bile ducts. *N. Y. State J. Med.*, 43:727-738, (April 15) 1943.
21. Porter, Arthur R.: Congenital absence of the hepatic ducts. Case report. *Memphis M. J.*, 18:85-86, (June) 1943.
22. Scrivner, Jessie Boyd: Observations on a case of congenital absence of the hepatic and common bile ducts. *Canad. M. A. J.*, 27:517-519, (Nov.) 1932.
23. Smyth, Malachy J.: Congenital obliteration of bile ducts with total transposition of viscera. *Brit. M. J.*, 1:84-85, (Jan. 18) 1941.
24. Strauss, Abraham, Gross, Joseph, and Kyman, Seymour: Congenital atresia of the common bile duct. *Ann. Surg.*, 117:723-727, (May) 1943.
25. Sweet, Lewis K.: Congenital malformation of the bile ducts. Report of three cases of one family. *J. Ped.*, 1:496-501, (Oct.) 1932.
26. Thompson, John: On congenital obliteration of the bile ducts. *Edinburgh M. J.*, 37:523-604, 1892.
27. Walters, Waltman, Gray, H. K., and Priestley, J. T.: Lesions of the biliary tract for 1940. *Staff Meet. Mayo Clinic*, 16:681-688, (Oct. 22) 1941.
28. Watkins, A. G., and Wright, G. Payling: Congenital atresia of the bile ducts. *Lancet*, 1:1066-1068, (May 20) 1933.
29. Wilson, Reginald: Congenital obliteration of the bile ducts. *Arch. Dis. Child.*, 11:271-274, (Oct.) 1936.

## THE LAST TWENTY-FIVE YEARS IN A COUNTRY PRACTICE

S. ERICSON, M.D.

Le Sueur, Minnesota

IN retrospect twenty-five years seem very short. There seemed never to have been time to do what one wished to do and a trip, meeting or picnic with family or friends was always being missed. Were I privileged to relive the last twenty-five years, I would still choose the country; but I would budget my time differently. There would be more time for other things besides routine work. I would select the place for my endeavors not only by the yardstick of plenty of work, but also as to how the working conditions would be—whether congenial professional relations could be enjoyed, and decent social attitudes and activities were likely to be present in the community. In other words, I would adjust my work so as to get more out of life and probably, thereby, give more in exchange. There is more to life than work, but so often we have lived most of it before we realize this fact. So, if I could do it over, I would set aside one-half day each week for myself, besides a regular vacation.

It is in the country that professional relationships of a congenial type become important. The pressure of medical practice would be reduced 50 per cent by a 50 per cent improvement in the relationship of colleagues. By development and nature medical work is individualistic, and in the days when communications were bad there was some excuse for narrow views, mean and jealous feelings towards competitors in the same or neighboring towns. Usually these things originated in some elongated story about a patient, or some doctor's behavior, started by some busybody; and as the doctors rarely met there was no chance to air the situation and it went from bad to worse. Today, there is no excuse for this. Today, practice in the country can be as pleasant as in the city, excepting perhaps the sparsely settled areas; and here the car has taken most of the hardship out of the work, and tomorrow the plane will take the rest.

Years ago country practice was admittedly very trying—bad roads, long hours, and isolation from stimulating contacts with other men and difficulties in getting help. But there were compensations. The expectations were not as great. You were welcomed without reproach even though

you were hours in getting there. You were completely on your own and gradually developed a confidence that can come only under such conditions. You had to be right; there was nobody else to rely upon. Courage and the ability seemed to develop. The word is used advisedly. When you shoulder responsibility, you do more reading and prepare yourself a lot more for eventualities. When there was no George to do it—you did it.

It was my misfortune early to see and meet unhappy relationships among doctors, or was I too idealistic in applying the Hippocratic oath literally? It has always seemed to me that the patient has the chief claim to the doctor's undivided attention. If that is so, a doctor must never feel imposed upon if a patient desires consultation or shifts about among doctors. To give the patient the best services at all times it is essential that good will exists among colleagues. Being mortals with afflictions as such, there are always occasions when a doctor cannot tend to every call. When those situations arise there should be common decency among colleagues that the work done by the absent doctor is not undone by innuendos or aspersions. If there is a difference of opinion as to diagnosis or treatment, that could be handled tactfully without ruffling the relations. Many times in the evolution of diseases the difference of a few hours between examinations may make a difference in the diagnosis and therefore in the treatment.

We doctors have made much of the free choice of physician in contract medicine and insurance cases. In our private work there should be no difference. A doctor can hold no patient by a mortgage. The essential point is that the service rendered be of such a quality that the patient will return again and again. Some patients voluntarily shift from doctor to doctor. Some patients are such that they consider some doctor their family physician; some, for various reasons, never get that feeling about any doctor. The relationship implied in the term "family-physician," is very valuable to society if it is respected on both sides and kept on a high level. This will be true more and more as our society

becomes more complex and consequently more people are subjected to more serious strains that tend to break down personalities. In this situation the confidential relationship in the family-physician setup should do much to stabilize individuals, and, therefore, be very helpful to society at large.

One very evident change in the last several years is the coming of group practice. Though every doctor is an individualist, the pressure of events and circumstances make it necessary that the profession adapt itself, and meet the needs as they rise. Group practice even in small towns will have to come. Twenty-five years ago this would have been impossible. Today it is possible but not probable. With the prospects, however, of prepaid medical care, the profession must show its good faith by making possible the best care for the least cost. There is no other way to do that than by cutting the overhead of that service. The simplest way would be grouping all expensive services under one roof—the coming community hospital—with the offices of the doctors in close proximity, so as to utilize every investment to the fullest. This is a challenge that must be met. To realize this objective the medical schools, as well as the county and state societies, must adopt appropriate measures.

Maybe an orientation course as part of undergraduate study covering medical economics, public relations, and professional relations between patients and the doctors might well be added to undergraduate medical instruction. The county society could do much in getting young practitioners started right with regard to his responsibilities not only as a doctor but as a citizen. It is certain that a good deal more has to be done in the future to keep the profession attuned to social needs. We must speak our minds if we think that other matters besides those purely medical in scope require correction. We should be in at the policy making. For that there is a need of a wider interest. It is not too early to stir up that interest during the undergraduate course of study.

The next twenty-five years will see a contest in ways of life as intensive as in any period of history: the individual in co-operation with his fellows selecting a government on one side; an all-powerful state controlling every activity on the other side. This year we doctors in Minnesota have, so to speak, "stuck our neck out," in getting enabling legislation for prepaid medical services.

It will take a lot of willing co-operation among the profession to get this working smoothly. It seems we should invite counsel from outside sources, especially as it concerns the distribution of this service. The control of the dispensing and the quality of service should rest entirely with the profession; while the distribution should be open to the public through some agency. The public pays the bills and should have a chance to have a say. If the medical profession can carry through successfully this improvement in the service to the people, it will go a long way in assuring that our American way of life can be made to work well where there is a will to succeed and to co-operate. It is only proper that medical men should assume responsibility in working out better relations and better facilities for service. Our training should be utilized not only for the profession of healing as such, but also extended to community and state problems. We should help to mold the public opinion as much as any other group in society, probably more so than any other, due to our experience. Today, especially when social planning is rampant, when so many so-called experts are trying to lead groups into all types of unknown methods for improving the lot of man, we, the medical profession, should not sit back. We should be in there, admonishing and advising. We have a responsibility greater than any other group, because our advantages of learning and understanding are greater. If we do not accept this responsibility, and act accordingly, we must assume a good share of the opprobrium for what happens, if unfavorable; and, on the other hand, we will deserve the gratitude of the public if we can help to correctly solve difficult problems. To do its full share in the future the profession must broaden its scope and help in the solution of the many problems confronting our country.

Probably the most serious question demanding a solution is that of the defense of our country in the future. Here is one problem, apparently outside the medical sphere, where we doctors should have something to say and say it. The big club to be used in getting compulsory military training on the statutes will be the deplorable physical condition discovered by the Selective Service. But it is too late to correct many of these physical and mental defects at eighteen or twenty years. The correction should be started in the kindergarten years or earlier. It would seem

proper for the medical profession to support the movement started on the West Coast, where the educational system is going to incorporate a more thorough training for health. Such an undertaking should not be too dogmatic or narrow. It should include both health education and a physical fitness program. Money spent during this period in life should bring better returns than later. Discipline should be included in the program. The setup should be such that the medical profession can aid freely in its evolution, so that it will keep abreast with medical progress and will not become a dead ritual. This would give our country a citizenry that is fit, informed, and comparatively easy to train in whatever methods a future war might necessitate. It is, of course, up to the people to decide, but we

should clearly explain that compulsory military training will not remedy the conditions disclosed by the Selective Service. This method would be less costly and disruptive as well as less provocative of an armament race.

In closing, I wish to emphasize the desirability of undergraduate instruction in some of the problems with which the young physician will be faced when he begins medical practice. Such instruction might prevent many useless moves when he is thrown on his own resources. With better undergraduate instruction, too, in applied psychology and psychiatry, the young physician would be better prepared to meet the problems of medical practice and to be of more assistance to the great number of people who break under the stress of modern life.

#### SURGEON GENERAL URGES PROMPT RELEASE OF ELIGIBLE PERSONNEL

Major General Norman T. Kirk, The Surgeon General of the Army, expressed the desire that all commanding officers give the fullest possible co-operation towards effecting the early release of Medical Department personnel who are eligible for separation from the service under the announced policy.

At the same time he urged that all Medical Department personnel occupying key positions and who are eligible for separation under the present criteria volunteer to continue on active duty to assist in maintaining the present high standards of medical care if no replacement is immediately available. It is contemplated that a period of six months' duty will be sufficient time to allow for the arrival of a replacement or for training an officer to take over duties of key positions and thus allow all officers eligible for release to be returned to civilian life.

General Kirk requested that commanding officers make every effort to obtain replacements for Medical Department personnel eligible for release in order that those officers might be returned to civil life at the earliest possible moment.

Under the announced Medical Department demobilization policy, Medical and Dental Corps officers are eligible for release providing they meet any one of the following criteria:

- (a) Adjusted service score of 80 or above.
- (b) Forty-eight years of age to the nearest birthday or above.
- (c) Entry on active duty prior to Pearl Harbor ex-

cepting critical specialists qualified in eye, ear, nose and throat, plastic surgery, orthopedic surgery, neuropsychiatry or laboratory clinicians. Officers qualified in these specialties are eligible for release if they entered on active duty prior to 1 January 1941 or if they meet the criteria on points or age.

This revised policy on separation is expected to return 13,000 physicians, 3,500 dentists, 25,000 nurses and a large number of other Medical Department officers to civilian life by the first of the year.

It will be necessary to retain a large number of low score men in the service for replacement for overseas men having high ASR scores. Other low-score men must of necessity be retained in the service to carry on the necessary activities of the Medical Department in this country and in theaters where American troops are operating.

It is intended that no one eligible for release will be held in the Army because there are men with higher scores overseas who have not been returned home. Eligible men will be discharged as rapidly as they can be processed for separation.

No enlisted personnel with a sufficient number of critical points will be kept because of "military necessity" except those very few men classified in one of three essential technical skills. These are: orthopedic mechanics, electroencephalographers who operate electrocardiac equipment, and radio transmitter attendants. The latter is not in the Medical Department.

# CLINICAL-PATHOLOGICAL CONFERENCE

## PERNICIOUS ANEMIA

EMIL M. SCHLEICHER

Minneapolis, Minnesota

BEN SOMMERS, M.D., and KANO IKEDA, M.D.

Saint Paul, Minnesota

### REPORT ON PERNICIOUS ANEMIA†

Ben Sommers, M.D.

The Pernicious Anemia Clinic at the Minneapolis General Hospital offers us a splendid opportunity for the study of this disease. We have a remarkably large clinic because of its situation in a city which has a large Norwegian and Swedish population. In the last five years, we have studied between 250 and 280 cases of this disease.

Pernicious anemia is a familial disease, and a good family history is, therefore, quite important. Most of our patients are of Norwegian, Swedish, or English extraction. We have one negress in the clinic whose family history reveals that she has a white ancestor with pernicious anemia. The majority of the patients are in their sixties, seventies, or eighties, and only one or two are in their late twenties.

The onset is almost always insidious. A fairly typical patient will come into the clinic or hospital with a hemoglobin of 15 or 20 per cent, and a red blood cell count of 800,000. This is a chronic process, although the final exacerbation requiring hospitalization may come rather suddenly, and it is surprising how well most of these patients get along in the presence of a severe anemia. Most of our patients are typical textbook pictures with gray hair, light-colored eyes, and a lemon-yellow skin. Other symptoms of which they complain are loss of appetite and weight, diarrhea, sore tongue, weakness, and numbness and tingling of the fingers and toes.

In October, 1940, we began treating all cases of pernicious anemia with a sterile solution of liver extract of zero potency.\* This was done to study the rate of relapse, neurological changes in relapse, and to test various liver extract treatments once relapse had occurred. We found that the average rate of relapse was four or five months; that is, four or five months elapsed before there was a decrease in the red blood cell count and hemoglobin. Three patients of this group are still in spontaneous remission and have normal red cell count, hemoglobin, appetite, weight and general well-being after a five-year period of time. One patient, a

ward of the city of Minneapolis, has had no form of liver therapy for the last eleven years, and has remained in spontaneous remission for this period of non-specific therapy. He is a proven case of pernicious anemia and is not receiving the very best diet.

We were rather surprised to find that when relapse occurred in a patient who had spinal cord involvement, no progression of the cord involvement could be found. Week after week, month after month, we asked them "How do you feel?" "Do you have any numbness or tingling?" "Is it harder for you to walk?" Invariably there was no complaint of an increase in numbness and tingling, and no change in their neurological picture was demonstrable. Finally, they complained of a feeling of weakness with a loss of weight and appetite, but these symptoms were not accompanied by progression of the neurological picture. We also found that patients with definite cord change exhibited no improvement in this condition once it had been established, in spite of massive and frequent administration of parenteral liver extract and supplementary vitamins. It seems to us that any improvement that is to occur in the cord pathology must be made within a few months after the onset of this condition. One of our patients died after a four-month period of rapid regression of subacute combined degeneration of the spinal cord. This case occurred before we began the aforementioned study in 1940, and the patient died from this neurological disease despite massive doses of liver extract, and in spite of the fact that his red cell count was maintained above 5,000,000 and the hemoglobin above 100 per cent during the entire period of observation. This, of course, is nothing new, and although it is a rare thing, it lends some credence to our belief that cord change is something that we do not understand too well. The sore tongue, the tingling and numbness which are so commonly a picture of early relapse in pernicious anemia may well be forms of peripheral neuritis rather than actual cord change, and these symptoms usually disappear within twenty-four to forty-eight hours after administration of liver extract parenterally. What part vitamin B deficiency may have in this picture we are unable to say at present.

We would like to mention briefly the achlorhydria which is usually present in these cases. At least 3 per cent of our patients, however, have been found to have hydrochloric acid after histamine administration, so that the presence of free hydrochloric acid in the gastric

Presented May 1, 1945, at the General Staff Meeting of The Charles T. Miller Hospital, St. Paul, Minnesota, Kano Ikeda, M.D., Pathologist.

†From the Pernicious Anemia Clinic, Minneapolis General Hospital, Minneapolis, Minnesota.

\*Kindly supplied by Parke Davis & Company.

contents does not necessarily disprove the presence of pernicious anemia.

Of the complications of pernicious anemia, we wish to mention only two: namely, malignancy and allergic reactions. The one complication which we are always watching for, and for which we do an annual complete x-ray examination of the stomach and bowel, is the presence of malignancy of the stomach or the gastro-intestinal tract, the most common site by far being the stomach. Gastric polyps are a precancerous lesion, and in our opinion, their presence is an indication for their removal. About 10 per cent of our patients develop carcinoma of the gastro-intestinal tract. One patient is well today, four years after removal of a colon carcinoma.

The complications which occur in the course of treatment are really reactions to liver extract. Twenty-two per cent of our patients have had reactions from parenteral liver extract. A few years ago our figures were severely criticized, but we have had ample confirmation by other workers in the last few years. The incidence of allergic reactions at Cook County Hospital in Chicago has recently been estimated to be 27 per cent. The reactions are of two types: the immediate reaction, and the delayed reaction. The former is probably due to the inadvertent injection of liver extract into a small vein, and it is followed almost immediately by syncope and shock. Adrenalin administered subcutaneously is very efficacious, and we have had no mortality from this reaction. The other types of reaction are slower in onset and occur from one-half to six hours after the injection. These patients feel nauseated and often have local or generalized urticaria. On subsequent visits to the clinic, we give a small injection of liver extract and watch carefully for reactions. If the reaction occurs again, these patients are classified as reactors, and we feel that intramuscular liver extract must be abandoned at least temporarily. We then give them oral liver extract. A few reactions have occurred from oral liver extract. One or two of our patients have not done well on this type of therapy, and we are going back to the old method of giving them raw liver juice, extracted from a pound of raw liver and given as a divided daily dose mixed with tomato juice. The remarkably favorable response some of our patients have had to this rather unpleasant product leads us to suspect that something important may have been removed in the process of refining the oral liver extracts.

We have found that the bone marrow study is very important, not only in the diagnosis, but in the follow-up of the patient with pernicious anemia. Certainly a sternal biopsy is not necessary in every case of pernicious anemia, but in the doubtful cases, or in the case which does not respond to liver extract, we have found the bone marrow study very helpful. We have been particularly interested in the response to liver therapy of pernicious anemia patients with liver disease. Sternal biopsy in these cases usually shows a high percentage of fat in the marrow, and we have come to believe that this, in itself, is an indication of liver disease, and we have seen the fat regress to normal values in a few patients by the use of Brewer's yeast in large quantities,

or by the use of choline chloride in 1 per cent solution given intravenously, for five to ten days.

Another finding that is not at all uncommon in patients with pernicious anemia who are not responding well to liver therapy is the development of an atrophy of the bone marrow. Sternal biopsies in these cases will reveal a very small myeloid-erythroid layer. No amount of liver extract will possibly raise the red count to 5,000,000 in these cases, and it is sometimes impossible to prevent ultimate death from an anemia which formerly was called aplastic. This form of atrophy of the marrow occurs to lesser extent in almost all people in advanced age, and it is not limited to cases of pernicious anemia.

Our dosage of liver extract in a new case of pernicious anemia is the more or less standard dosage employed in other parts of the country. The new case receives 3 c.c. of a rather potent, usually a 10 or 15 unit, liver extract, daily for three days. On the seventh, eighth, or ninth days, after the reticulocyte response has been studied, an additional 3 c.c. are given; and after ten more days we usually give 3 c.c. twice weekly until the blood picture has reached its maximum count of approximately 5,000,000 in the male and 4,500,000 in the female. After that, our average dosage is about 3 c.c., or 45 units, every three or four weeks.

In our experiments with various types of liver extract, we have found great variations in response. Very small doses of low potency liver extracts were found efficacious in treatment. As little as 0.1 c.c. of a 1 unit liver extract given daily was found to produce a maximum rise of red blood corpuscles in many patients. Some types of liver extract were found to cause a seemingly maximum rise in red count and hemoglobin without any appreciable rise in reticulocytes.

In conclusion, let me re-emphasize the importance of a yearly gastro-intestinal study in every case of pernicious anemia. Although this is an expensive procedure, it is certainly indicated in view of the high incidence of malignancy in pernicious anemia.

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#### HEMATOLOGICAL DIAGNOSIS OF ADDISON- BIERMER'S DISEASE (PERNICIOUS ANEMIA)

**Emil M. Schleicher\***

A large proportion of the population of Minnesota is Scandinavian, and among the Scandinavians are encountered more cases of pernicious anemia than among any other racial groups. For that reason, Dr. Sommers and I have been able to maintain a large clinic at the Minneapolis General Hospital and to enjoy the unusual opportunity to study all phases of this interesting condition.

Our data show the same racial and hereditary trend as those accumulated in Sweden, Norway, Denmark, England, Germany, and Northern France. There is no

\*Hematologist, Minneapolis General Hospital, Minneapolis, Minnesota.

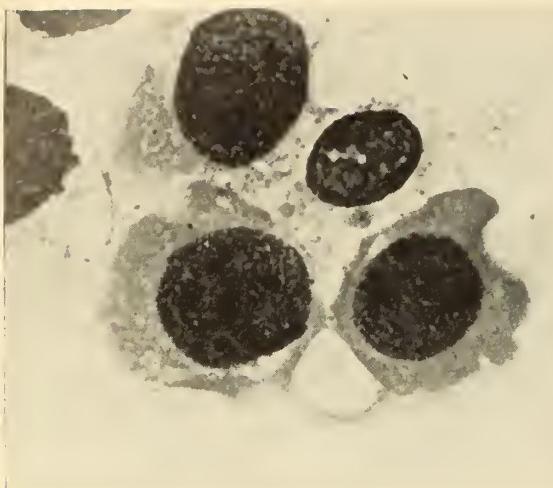


Fig. 1. Sternal marrow imprint. Diseased erythrogenic reticulum. Note the difference in the pattern of the nucleus from that shown in Figure 3.

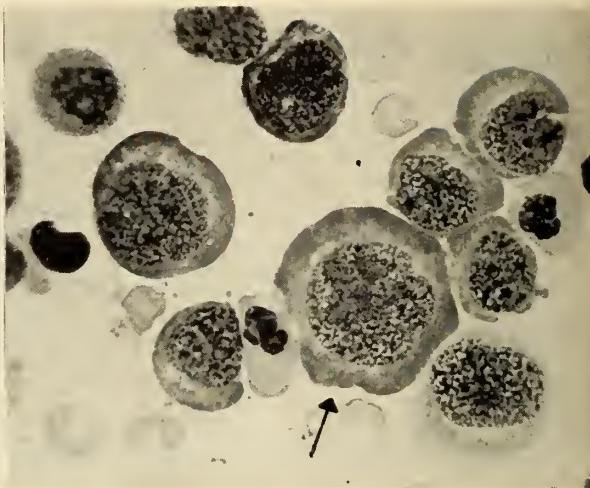


Fig. 2. At arrow a promegaloblast. The other cells are megakaryoblasts at various maturation stages. Note the difference in the pattern of the nucleus from that shown in Figure 4.

doubt in the minds of those who study this disease that it is hereditary. Many families are known in which the disease occurred in successive generations.

I presume that you are well acquainted with the hematological terms. I wish to state that the main purpose of the hemopathologist is to confirm or rule out the diagnosis of this disease in a given case. We feel today that no diagnosis of Addison-Biermer's disease (pernicious anemia) should be made without a bone marrow study. Definite hematologic criteria of this disease have been worked out. That we have been able to recognize the disease quite early at the Minneapolis General Hospital is due to the close co-operation between the clinician, the hematologist, and the medical technologist. The disease, as you all know, has phases of relapse and remission. Most of our patients were first seen in relapse. The bone marrow organ at this stage is generally well affected by the disease. The presence of the promegaloblasts in the bone marrow is essential for the diagnosis of Addison-Biermer's disease from the hemopathologic point of view. Thus the recognition of the disease is not difficult. To detect the disease when it is in the stage of remission is the problem. At the present time, no specific therapy is instituted in doubtful cases. We let the patient relapse. Eventually, the bone marrow will show the specific morphologic picture considered essential for the diagnosis of this complex disease.

In studying the bone marrow, it is well to discuss the "units" which make up the marrow tissue. The normal pattern of these units is quite constant. That means, the fat, the hematopoietic tissue and the vascular system are present in given quantities and proportions. The size of the units and their component parts will be altered when the disease affects the bone marrow. This feature will give a good idea of the functional state of the bone marrow organ.

Take the case of Mr. X. He is believed a potential case of Addison-Biermer's disease. The first bone mar-

row examination may not be typical or conclusive. He will then receive nonspecific therapy until the clinical and hematologic data show that the disease is in the relapse phase. Then the bone marrow is again studied, and the pattern compared with the standard patterns obtained from cases in relapse, partial relapse, or partial remission. The pattern thus revealed is not only a distinct aid in diagnosis, but also gauges the severity of the disease by the character of the marrow morphology. When the disease affects the bone marrow, the units become hypertrophic. The M-E (Myeloid-Erythroid) volume per cent (determined by means of a Wintrobe hematocrit), which means the total mass of nucleated marrow cells, increases, the fat quantity becomes reduced, and eventually the fat disappears altogether. The reticulum becomes hypertrophic, pathologic erythroblasts, myeloblasts and megakaryoblasts are proliferated.

Looking at a small area of such marrow greatly magnified, one sees a distinct pattern. Reticulum cells (primitive mesenchyme) form the framework of the bone marrow. They change their morphology when the disease affects the marrow. Individual reticulum become enlarged. The reticular nucleus appears hydropic. The parachromatin is prominent. The nucleoli are indistinct, the nuclear membrane is not conspicuous, the cytoplasm is basophilic and not homogenous. The entire cell has the appearance of being proliferated by a diseased reticulum (primitive mesenchyme). These totipotential cells undergo pathological mitoses. These cells give rise to the promegaloblasts, the highly diagnostic cells. If these pathological erythroblasts are present, it means only one thing, namely, Addison-Biermer's disease (pernicious anemia). The fact that promegaloblasts are proliferated by the mother reticulum nullifies the concept that this tissue gives rise to the normal erythroblasts. Indeed, one does not expect cancer cells to give rise to normal epithelium. Thus diseased reticulum gives rise to promegaloblasts in con-

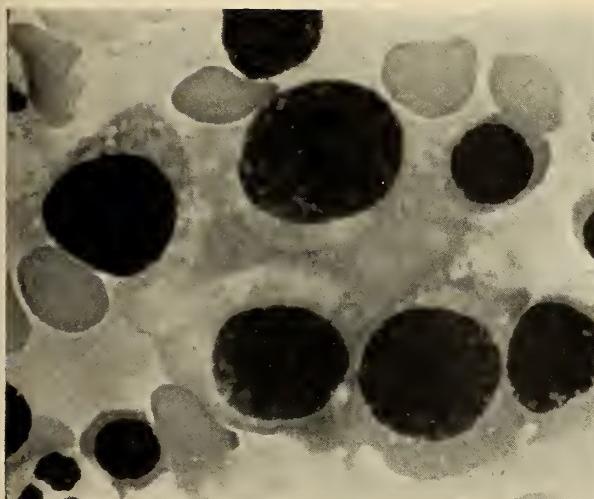


Fig. 3. Sternal marrow imprint. Normal erythrogenic reticulum.

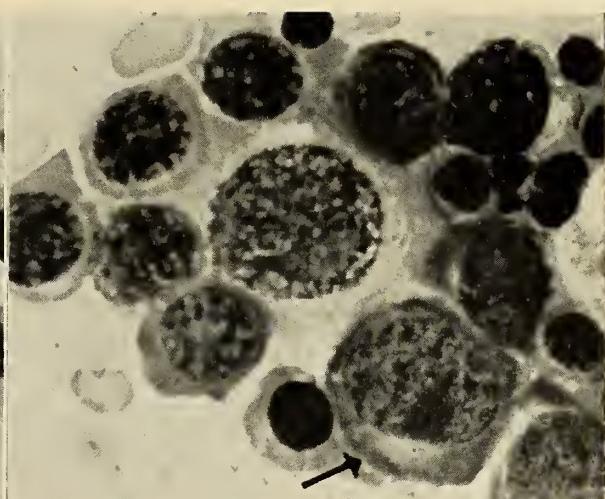


Fig. 4. At arrow a pronormoblast. The other cells are normoblasts at various maturation stages.

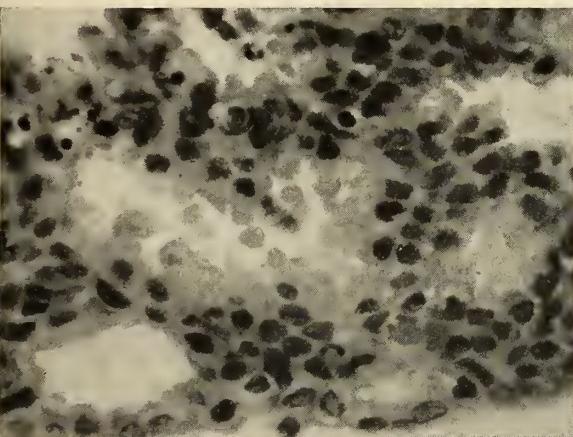


Fig. 5. Histologic preparation of a sternal marrow unit showing metastatic adenocarcinoma.

trast to the normal reticulum which proliferates pronormoblasts. The promegaloblast (Fig. 2) when placed next to the pronormoblast (Fig. 4) is morphologically so conspicuously different that both cells can be easily distinguished at a glance. The promegaloblast rarely enters the general circulation. In over 7,000 sternal biopsies, representing all forms of hemopathologic states, we have not found the promegaloblasts and respective maturation stages in diseases other than pernicious anemia or biologic variants of this hereditary-complex clinical entity. Thus, it is believed that promegaloblastosis is a more sensitive criterion of this disease than achlorhydria, smooth tongue and macrocytic anemia. After the administration of liver extract, the promegaloblasts undergo mitoses and produce normoblast-like megaloblasts. The latter cells are difficult to separate from physiologic normoblasts. Therefore, it may become impossible to make a diagnosis of pernicious anemia, when the patient has received liver extract for even two or three days. By this time, the marrow morphology is

of a transitional character, and the recognition of the disease is difficult. Various macrocytic anemias will respond to liver therapy, and thus it is important that the bone marrow is examined before any therapy is given. We believe that no patient is so ill that sternal aspiration cannot be done before therapeutic measures are instituted. At the Minneapolis General Hospital, all patients suspected of having Addison-Biermer's disease get a sternal aspiration to confirm or rule out this complex disease. The diseased reticulum retrogresses under liver therapy. Just as radiation controls carcinomatous growth, and thus normal growth is given a chance, liver therapy physiologically activates the quiescent reticulum, resulting in normal erythropoiesis. Within five to ten days, the pathological reticulum (Fig. 1) will have disappeared, and a new physiological reticulum (Fig. 3) will have taken its place. As you can easily see, this new reticulum is morphologically entirely different. The reticulum syncytia are smaller, the nuclei are deeper staining, have sieve-like chromatin, as compared with those of the pathologically activated reticulum where the nuclear chromatin is granular. The pronormoblasts are quite uniform in size. Production of physiological normoblasts indicates that normal hematopoiesis has been restored. It is understood that pernicious anemia is not curable, and at no time will there be a complete return to normalcy of the bone marrow. Once the disease has affected the bone marrow organ, it leaves scars, so to speak. Liver therapy does not ease these scars completely. It is thus very important that enough of the normal reticulum is left which will form the foundation upon which the bone marrow organ reconstructs itself. The loss of reticulum means the loss of functional bone marrow. If the volume of the active bone marrow is greatly reduced, we speak of the atrophy of the organ. Such a state is reflected by an erythrocyte level below normal. There are quite a number of patients in our Clinic that have a reduction below the accepted standard peripheral blood level in spite of the adequate therapy and the absence of complications.

## CLINICAL-PATHOLOGICAL CONFERENCE

What are some of the complications? A complication which Dr. Sommers pointed out is that of fatty metamorphosis of the bone marrow organ. The sternal marrow unit has a large number of fat spaces and very small areas of hematopoiesis. The patient may be well for a time but suddenly fails to respond. The problem at hand is to reduce the fat quantity and thus overcome the refractory behavior of the patient.

From time to time we encounter such cases of which the following is an example. The patient is refractory. The gastro-intestinal x-ray is negative. The gastroscopic examination reveals a slight elevation of the mucosa of the pylorus. No liver impairment by routine tests is demonstrated. The sternal puncture reveals a metastatic adenocarcinoma of the marrow (Fig. 5). An exploratory laparotomy, then, demonstrates a diffuse carcinoma of the stomach. In another case, a benign polyp is presumed to be present by x-ray examination and by the gastroscope. The marrow biopsy, however, revealed a metastatic carcinoma, and, at operation, a medullary cancer of the stomach was demonstrated. I have also demonstrated miliary tuberculosis in the sternal marrow in cases in which the hemoglobin continued to drop in spite of treatment with iron.

I may emphasize a point here—do not change to another brand of liver extract simply because there is no therapeutic response. Re-examine the patient carefully when symptoms of relapse become apparent and examine the bone marrow, if at all possible. You may be surprised to find the answer to your problem wholly unexpected up to the time of the sternal puncture.

### Discussion

DR. KANO IKEDA: I am particularly impressed with the results of sternal biopsy carried out according to the technique of Schleicher, as demonstrated here this evening. I have long sought to learn a method of preparing bone marrow tissue, which is simple, yet would furnish satisfactory and practical information to the average clinical pathologist. Several times in the past ten years, I have attended demonstrations on sternal biopsy procedures by men who are considered authorities on the subjects. Each time I came away discouraged, because their technique and the marrow preparation have never appealed to me as practical in the average clinical laboratory. The procedure, as outlined by Schleicher, on the other hand, appeals to me as the most satisfactory and practical in the hands of the average clinical pathologist. It is bound to receive universal acceptance, as a useful and reliable diagnostic method. Its routine use, not only in cases suspected of pernicious anemia and other blood dyscrasias, but in other obscure diseases may now be freely predicted.

A proper preparation of bone marrow material has long been considered difficult. Schleicher has pioneered in this field for a number of years and has come out with a superb technique which is comparatively simple, yet most reliable and diagnostic, which includes not only a method of sternal puncture itself but a new staining method which guarantees a good diagnostic smear, often difficult to obtain in the average laboratory. You have just seen a sample of his work. He is to be congratulated for stimulating the interest of the medical profession of the Twin Cities in the use of sternal biopsy.

He has, furthermore, clearly demonstrated to us the

pathogenesis of pernicious anemia with the aid of these excellent lantern slides, illustrating the steps in the development of the promegaloblast from the pathological reticulum cell, in the bone marrow, which in his opinion is the absolute proof in the diagnosis of this disease. He has compared this process with the development of normal erythrocytes, and differentiates, convincingly, the promegaloblast of pernicious anemia from the promegabolast which is the immediate derivative of the normal reticulum cell, and from which the erythrocyte is derived in the normal bone marrow.

A word of caution is in order, however. The technique of sternal biopsy itself should be mastered. The preparation of sternal marrow must be carried out only by a trained technician. The marrow smear and section, thus prepared, must be interpreted. The use of sternal marrow diagnosis must, therefore, be entrusted only to the trained men.

Although, as has been mentioned, the average clinician rarely sees a case of pernicious anemia, as a clinical pathologist I am called upon to aid in the diagnosis of this disease quite frequently. I see within a year a number of blood smears on which I would make a definite diagnosis of pernicious anemia, a number of other macrocytic anemias in which a positive diagnosis cannot be given, and still others in which I would give a negative opinion. In none of these cases, have bone marrow smears been examined to confirm or disprove my diagnoses. Usually, in addition to the blood findings, the clinician depends on the well established clinical criteria, including the negative free hydrochloric acid in the gastric contents, with or without histamine, the negative gastro-intestinal x-ray findings and certain neurologic manifestations. Liver therapy is, then, instituted, and the patient improves. Thus, we have made a justifiable diagnosis of pernicious anemia in a certain percentage of cases without the marrow smear. At the moment, I am inclined to rely heavily on the peripheral blood findings, together with the characteristic cardinal clinical findings, in the routine diagnosis of pernicious anemia. This assertion seems to be especially valid, at least, in cases of severe anemia with the hemoglobin below 40 or 50 per cent. I am fully aware that Schleicher and some other qualified hematologists, with their vast clinical experience, supported by sternal biopsy, will repudiate this view. I am looking forward to the day, with some misgivings, when the clinician will demand a positive proof in the marrow smear, whenever we make a diagnosis of pernicious anemia on the peripheral blood smear. I further predict that sternal biopsy will be a routine diagnostic measure, now that the technique of preparing the marrow material has been perfected by Schleicher.

We are deeply indebted to these gentlemen for their instructive and revealing presentation.

DR. C. N. HENSEL: In the days when a good many of us took our hematology at medical schools, there was a controversy as to whether pernicious anemia was caused by some toxic agent or whether it was the disease of the bone marrow. I think the gentlemen tonight have very nicely defined the disease. That individuals of the Norwegian-Swedish race, between the ages of 50 and 70, served as basis for their redefinition of the disease is most interesting. Further, their point of view regarding the type of pernicious anemia that occurs in pregnancy, in benzol poisoning and many other toxic states is most constructive. It would be interesting to know whether with the advent of a broader understanding of vitamins in nutritional diseases, the percentage of new cases that are coming to the clinic are increasing or decreasing, whether the general nutritional changes have any effect on the disease, because we know that the liver is a great storehouse of vitamin B and vitamin C.

(Continued on Page 870)

# HISTORY OF MEDICINE IN MINNESOTA

## NOTES ON THE HISTORY OF MEDICINE IN HOUSTON COUNTY PRIOR TO 1900

By NORA H. GUTHREY†

Mayo Clinic

Rochester, Minnesota

(Continued from the September Issue)

### Biographical Sketches\*

The paucity of biographical material available concerning the pioneer physicians of the Middle West and of the Northwest is unfortunate. The stories of few of these men ever were written; data are buried in old correspondence and books of unknown or inaccessible possession and in faulty memories. The notes presented here on pioneer physicians of Houston County are unavoidably incomplete. It is hoped that before the ultimate publication in book form of the history of medicine in Minnesota, material concerning additional early medical practitioners in the county as yet unchronicled and additional material concerning those men who have been listed, can be obtained. That only brief mention is given to some of the pioneer physicians is evidence, not of slighting discrimination, but rather of lack of authentic information. All had part in the development of their communities and of the county and in the advancement of scientific medicine and surgery.

**John W. Albee**, son of William and Charlotte Wood Albee, both of whom were of English descent and natives of Rhode Island, was born at Burrellville, Rhode Island, on February 14, 1829. There were three other sons, Charles, Loren and Horace. Charles came to Houston County, Minnesota, in the spring of 1854 with a group of pioneers from Burrellville and settled in Portland Prairie, a community partly in Winnebago Township and partly in Wilmington Township. John followed in 1856.

John Albee received his early education in the schools of Burrellville and worked in a store in the town until he joined the colony in Houston County,

\*Mrs. George (Elizabeth West) Edward, widow of Dr. George Edward, of Canton, Fillmore County, Minnesota, accomplished excellent preliminary field work, during a period in 1941 and 1942, for the Olmsted-Houston-Fillmore-Dodge County Medical Society in the difficult task of collecting biographical data concerning pioneer physicians of Houston County (and Fillmore County). Whenever possible, she carried on correspondence and obtained personal interviews with friends and acquaintances who knew the early physicians or had information about them, and especially with members of the families of the physicians. She referred to records of Houston County, the History of Houston County of 1919, certain old newspapers for comments and obituaries, and Mervin's Business Directory of Minnesota of 1869. Her compilations of data she submitted in every instance possible to some authoritative person, a relative of the physician in question, if known, for criticism.

These biographical data have been incorporated in the accompanying sketches; the arrangement has been changed and some anecdotes have been omitted. Whenever they have been obtainable, the writer has added data from official medical registers, records and resolutions of medical associations, reports of the State Board of Health, from commercial directories and from medical directories, as being of historical value. About some of the early physicians concerning whom only the name had been available, information has been discovered, and the names of additional physicians have been included. Bibliographical notes will appear at the close of this article.

Grateful acknowledgment is made here to the many persons in Houston County and elsewhere, lay citizens, officials, physicians, writers, editors, librarians and other professional workers who have been helpful in the obtaining of recorded data and of reminiscent and general historical information.

where he made his home with his brother and family and with them faced the hardships of pioneer life. Severe winter weather and seasonal floods made it difficult at times to reach sources of supply and occasionally hunger was near all settlers; the figurative threat of the wolf at the door was heightened by the literal danger, for wolves were known to attack lone pedestrians in the region. The Albee home was the headquarters for all the New Englanders who had come to Portland Prairie. The family was influential in the organization of the local Methodist Church.

Not long after he came west, John W. Albee began the study of medicine at Scudder's Eclectic Medical College in Chicago and in 1860, after his graduation and return to Minnesota, he was licensed by reciprocity and began general practice in Caledonia, using his rooms as his office. For a time he served as county physician. After 1883 he practiced under an exemption certificate. He followed certain original, effective methods of his own that still are recalled with affectionate humor. Always, it has been said, when he was examining a patient, he would keep up a characteristic running comment, almost *sotto voce*, which diverted and amused the patient and, which no doubt was its purpose, obviated the undesirable effect of solemnity and tension. Members of his family have described him as kindly, but blunt, "with very little use for people who were trying to make themselves sicker than they were." On one occasion when he had been called to see a woman whose husband said that she was having a hysterical fit, Dr. Albee found the patient lying rigid with her eyes closed. He thought that he could detect a slight flutter of her eyelids, however, and said to the husband, "I believe I'll try some skunk's blood on her." Immediately there were signs of recovery.

When Dr. Albee's health began to fail, in 1890, he retired from active practice and, having remained unmarried, returned to the home farm to live with his brother Charles and his nephew Alfred. He died there on October 3, 1900; the cause of death was obstruction of the bowel. A kindly, helpful man, "Dr. John" was respected and much beloved throughout the large community that was the field of his work.

**A. A. Anstey** practiced medicine in La Crescent Village and Township probably in the seventies, certainly well into the eighties.

**Leslie Avery**, a physician of the regular school, was practicing in Caledonia in the early nineties.

**Alexander Batcheller**, one of a group of settlers from Rhode Island, came to the community of Portland Prairie, near Eitzen, in 1854, and immediately became an active member of community and county life. When the post-office of Portland Prairie was established in Winnebago Township, in 1855, Dr. Batcheller became postmaster and served until a successor was appointed regularly; at this time the office was taken into Wilmington Township and its name changed to Wilmington. In 1856, when a mail route was established between Brownsville, Minnesota, and Dorchester, Iowa, Dr. Batcheller operated it. Beginning in this year, for nearly four years he served as a member of the county governing board and also on the board of Wilmington Township. At the first town meeting in Wilmington, on May 11, 1858, when the historic decision was made that hogs should be permitted to run wild in Wilmington Township, Dr. Batcheller was chairman of the board and when, on September 14, 1858, the first Houston County Board of Supervisors held its first meeting,

in Caledonia, he was present. Subsequently he was appointed a member of a committee to draw up rules by which the board was to be guided and also of the regular committee to oversee the treasury, claims, accounts and printing.

His public spirit was expressed as fully in other ways, less official. In those times, because of imperfect facilities for transportation and the consequent uncertainty of delivery of mail, there were few subscriptions to newspapers among the settlers. News when received was not news, but history. Dr. Batcheller, in an attempt to enliven the community, organized a debating club, which met in his home or, after 1860, in the schoolhouse; at the meetings there were argued more or less heatedly such questions as those of nature and of art, whether or not capital punishment should be abolished, and others equally productive of discussion. And in this period, in 1856, when the Caledonia Academy was organized, Dr. Batcheller was one of the trustees. His family history and his training in medicine and the details of his professional experience, like those of many another pioneer physician, are not known.

**William W. Bell** was born on April 18, 1838, at Philadelphia, Pennsylvania. He received his early education at Cannonsburgh, Washington County, Pennsylvania, and his medical grounding at Jefferson Medical College, in Philadelphia, from which he was graduated in June, 1859. With the coming of the Civil War one William W. Bell, almost certainly the same man, enrolled on August 28, 1861, and was mustered into service on October 15, 1861, at Camp Orr, Pennsylvania, as a corporal in Company A of the Seventy-eighth Pennsylvania Regiment of Volunteer Infantry. In October, 1862, he was reduced to private and was honorably discharged as such on March 23, 1863, at Murfreesboro, Tennessee. He again enlisted on September 3, 1864, at Greensburg, Pennsylvania, as a private in Company F of the 206th Pennsylvania Regiment of Infantry and five days later was mustered out as a private by reason of promotion to first lieutenant. Accordingly, he was mustered in on the following day, September 9, as a first lieutenant of the 206th Pennsylvania Infantry and was honorably discharged and mustered out on May 15, 1865, his service no longer being required. He had served in the battles of Murfreesboro, Nashville, Lookout Mountain and in other engagements and had been with Sherman on the march to the sea. Dr. Bell practiced medicine in Philadelphia from 1865 to 1880, when he came to Brownsville, Houston County, where, it has been recorded, he had an extensive medical practice into the nineties.

**Paul Bjornson**, one of a family of eight children, was born in Iceland on May 1, 1853. His brothers and sisters were Theran, Anna, Haldrun, Sarah, Sigrun, Swan and Oliver, of whom, in 1941, none was living. Oliver, the youngest, became a physician and practiced in Winnipeg, Canada, until his death in 1938.

The father, Bjorn Bjornson, a native of Iceland, was employed as an agent to encourage emigration and to bring passengers from Iceland to America. When he brought his family to the United States is not known, but Paul, who received his early education in the public schools of Iceland, studied medicine at Rush Medical College, in Chicago, and was graduated in the early seventies. In Chicago he gained the interest of Dr. Nicholas Senn, who advised him, because of information received from Dr. Senn's relatives in Houston County, to go to the village of Houston, and the young man, then twenty-six

years of age, settled there, the only resident physician, in 1879. A member of the Lutheran Church, a student and an intelligent and indefatigable physician, Dr. Bjornson fitted well into the community. In 1880 he was appointed county coroner and he was still serving when on April 24, 1881, his untimely death occurred.

Not long after his arrival in Houston, Paul Bjornson had been married to Julia Foss; there was one child of the marriage, a son, Burns, who died in 1891. Some years after her husband's death Julia Foss Bjornson was married to A. H. Hvambsahl, of Houston. From Mrs. Hvambsahl have come descriptions of some of the hardships and struggles of the young physician. It was not until shortly before his death that he had been able to buy a team and buggy with which to make his professional calls. Until then he had walked to nearby homes and had hired livery rigs to travel greater distances if the families who needed him did not send transportation. Usually, however, when the call was from an outlying neighborhood, some one came with a team and lumber wagon for him, and his tedious rides over rough, jolting roads in almost springless vehicles were many. On one such occasion, when he had gone to officiate at a confinement case, he was long in returning. On the second day of his absence Mrs. Bjornson was worried and on the fourth day she was almost frantic, when he finally arrived safely, "happy that he had been able to save two lives."

**E. W. Bowles**, a member of the regular school of medicine, was in Brownsville around 1886 and 1887.

**P. T. Bowen** was practicing medicine in the village and community of Houston in 1869 and 1870 and it appears that he was earlier there or elsewhere in Houston County, judging from references to his association with Dr. S. V. Groesbeck in 1864 and 1865 and early mention of him as a contemporary by Dr. G. J. Sheldon, who entered the county in 1853, in his memoirs of eventful pioneer years in the county.

**William E. Browning** was born at Exeter, Ontario, Canada, on July 31, 1873, one of a family distinguished by the number of its members successful in the medical profession. His father, Dr. J. W. Browning, a prominent Canadian physician, was born in Somerset, England, the son of William J. Browning, an English watchmaker who brought his family to Canada in the early fifties. J. W. Browning, after receiving his degree in medicine from Victoria University of Toronto, practiced medicine in Exeter, where he also operated a drug store and took an active part in civic affairs; especially interested in public welfare, he long served as president of the local county reform association. Dr. J. W. Browning was married first to Nellie Cash, who was born in Ontario in 1848, the daughter of David Cash, a manufacturer, a native of Wales. There were two children of this marriage: Addie, who became the wife of Judge George Mahaffy, of Medicine Hat, Alberta, and William E. Browning. After the death of his wife, Dr. J. W. Browning was married to Elizabeth E. McDonnell. Five children were born to them: Harry J., a physician at Exeter; Percy H., at one time associated with the Dominion Rubber Company at Toronto; Eva May, wife of George Hawkins, of Exeter; Earl F., a merchant, and Hazel L., wife of Oliver Becker, of Hamburg, Ontario.

William E. Browning, after receiving his preliminary education in the

schools of Exeter, entered McGill University, in Montreal, from which he was graduated in the spring of 1899 with the degree of Doctor of Medicine and Doctor of Surgery. His medical education was supplemented by a few months of practice with his father. In December, 1899, attracted by the financial opportunity offered by the thriving western community, he came to Caledonia, Houston County, where he entered upon a long and distinguished professional career. Even while he was in college, his dream had been at some time to be at the head of a hospital of his own, and this ambition was realized when, in 1903, he established the Caledonia Hospital. So rapid and sound was its growth that by 1908 it was necessary to replace the first small institution with a large, modern, thoroughly organized and equipped hospital in which Dr. Browning put into excellent effect some of his original ideas about diet and the care of patients.

Always identified with the advancement of his profession, Dr. Browning was helpful to young physicians who came under his influence; he was worker for public health and sanitation, and long served as health officer for Caledonia; and he was active in various medical societies. Instrumental in the organization of the Houston County Medical Society, which later merged with the Fillmore County Medical Society, he served for several years as its president. He was a member of the Southern Minnesota Medical Association and its vice president; the Minnesota State Medical Association, the American Medical Association, the British Medical Association and the Association of Railroad Surgeons of America; and he was a Fellow of the American College of Surgeons. He kept in touch with scientific progress by study at home and abroad. In 1928 he and Mrs. Browning were in South America with a tour of the American College of Surgeons and from there continued their trip into Asia and Europe, where Dr. Browning took post-graduate work in surgery at Vienna.

Public-spirited, Dr. Browning worked faithfully for enterprises that would benefit the community. He was president of the local pension board in 1918; a member of the good roads committee and president of the Houston County Automobile Association; vice president and president of the Caledonia Commercial Club; chairman of the Houston County Chapter of the American Red Cross during World War I. Long active in the work of the Rotary Club in the district, he organized the Rotary Club of Caledonia and was its first president. He had various fraternal affiliations; in the Masonic organization he attained thirty-two degrees. He was a member and supporter of the Methodist Episcopal Church.

Dr. Browning's hobbies were intellectual diversions. He had one of the finest exhibits of Indian relics, curios and rare fossils in the state, and his collections of stamps and coins, among the most nearly complete in the Northwest, had been gathered from practically all civilized countries of the world.

William E. Browning was married in 1900 to Dorothy J. Gould, of Exeter, Ontario. There was one child of the marriage, a son, E. Reginald. Some years after his wife's death, Dr. Browning was married to Selma Kittleson, who assisted him in the supervision of his hospital and who after his death continued to manage the institution.

On May 5, 1929, at the village of Wilmington, Dr. Browning was showing to a group of the local citizens the moving pictures that he had taken in Norway and the Holy Land the previous year and had just finished his talk when he suddenly was taken ill. He became unconscious before the short distance from Wilmington to Caledonia could be covered and twelve hours

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later, on May 6, 1929, he died in his hospital from cerebral hemorrhage. He was survived by his wife, his son, two sisters, three brothers and his father, who at the age of eighty-six years was continuing in medical practice.

**Albert J. Carpenter** was graduated from the Eclectic Medical College of New York in 1871 and by 1878 had come to Houston County and into the community of Sheldon, where he practiced as physician and dentist. By 1883 he was in Hokah and after December 31, 1883, he practiced under exemption certificate No. 710-3. Dr. Arthur M. Crandall, in Hokah from 1896 to 1903, knew Dr. Carpenter as a state licensee who had retired from medical practice by 1896 at an advanced age. When in that year Dr. Carpenter died, Dr. Crandall, who a few months earlier had come to Hokah, signed the death certificate.

**George Johnson Cass** was born at Waterford, Massachusetts, on September 12, 1847. His father was William Cass, who was born at Smithfield, Rhode Island, a direct descendant of General Lewis Cass. His mother was Sarah W. Sturdy Cass, born at Attleboro, Massachusetts, the only daughter in a family of eight children. She was a teacher and all of her brothers were jewelers in Attleboro. William and Sarah Cass had four children: George J.; Charlotte (Mrs. McNelly, of Portland, Minnesota); Adelaide (Mrs. Eddy, of Fort Dodge, Iowa); and William, of Lyons, Nebraska, who in 1941 was the only member of the family who was living. The record available is meager, but it seems probable that the Cass family was among the many settlers from Massachusetts and Rhode Island who came early into southern Houston County.

George J. Cass received his elementary education in the schools of Waterford and in due time took his degree in medicine, probably around 1880, at the Eclectic Medical Institute of Cincinnati, Ohio. He was married to Ellen Louise Healy, a teacher, who was born at Dudley, Massachusetts. They had three children, Edwin Lewis, Helen M. and Harriet H. Cass. Helen became a nurse, employed at the Great Northern Hospital of Missoula, Montana; Harriet was married to E. D. Rowland, of Mexico, Missouri.

When Dr. Cass began his general medical practice in Houston County in the eighties, it was in the community of Portland Prairie, in Wilmington and Winnebago Townships, where he remained until the late nineties, or possibly 1900, when he removed to the larger village and more populous community of Caledonia. During part of the ensuing ten years in Caledonia he assisted Dr. W. E. Browning in the Caledonia Hospital. He was a member and an elder of the Methodist Church and was a Mason. A faithful and able practitioner of medicine, he was esteemed in the communities that he served.

**F. Castle** practiced medicine for a time in Caledonia in the late seventies. He has been recalled in the village as a gentleman, tall, personable, active, well groomed, who drove fine and fast horses and who was esteemed in the community. He was one of the local residents who was invited to give commencement addresses at the exclusive Caledonia Academy and he is said to have been engaged to marry a daughter of a local family. Whatever his reason for leaving Caledonia, the impression remains in the community that "he went to the Dakotas to go bonanza farming." A record of his professional qualifications has not been discovered.

— **Chase**, brief mention has it, in 1860, was already an "old resident" of the community of Mound Prairie, perhaps earlier than Dr. G. J. Sheldon, who has figured so largely in the story of the township.

**Andrew J. Christensen** practiced medicine in Caledonia in the early eighties and perhaps long before. When the Affidavit Ruling of 1887 was passed in Minnesota, Dr. Christensen was one who filed an affidavit, prior to 1890, with the secretary of the State Medical Examining Board, that he had been engaged in the practice of medicine in the state previous to July 1, 1887.

— **Cowles** was one of the physicians in Houston County who were mentioned as contemporaries by Dr. Giles J. Sheldon, of Mound Prairie, in his diaries between the years of 1853 and 1880.

**Arthur Murphy Crandall** was born on October 11, 1870, in Pleasant Valley Township, Fayette County, Iowa. His father was David Venrenzulor Crandall, a farmer, a native of Chautauqua County, New York, who had removed to Fayette County in 1855. His mother, Rachel Ardelia Thompson Crandall, born at Delphi, New York, was a teacher in the public schools before her marriage. There were four children, Anna, Nettie, Fred Stanton and Arthur Murphy, of whom, in 1941, Anna (Mrs. Knight, of Fayette, Iowa) and Arthur were living.

Arthur Crandall spent his boyhood on the farm in Fayette County and acquired his early education in the country schools. He completed the course of the Clermont (Iowa) High School, from which he was graduated in 1889 as valedictorian. For two years he taught country school and then began to study medicine under a preceptor, Dr. Joseph E. Eaton, of Lincoln, Nebraska. For a time subsequently he was a student at the University of Nebraska before completing his medical studies at the Chicago Homeopathic Medical College, from which he was graduated on March 17, 1896. First licensed to practice medicine in Iowa and Nebraska, in 1896 he was licensed, by examination, to follow his profession in Minnesota.

When, on April 18, 1896, Dr. Crandall opened an office in Hokah, Houston County, his coming was welcomed by the village, for the only physician then living there was the elderly Dr. A. J. Carpenter, who some time since had retired from practice. Hokah, so flourishing in the early years, by 1896 had a population of about 500. Dr. Crandall served as coroner of Houston County from 1899 to 1902, inclusive. In another branch of service he has recalled an incident typical of the opposition to official action which physicians occasionally experience: the commitment by him and Dr. O. F. Fischer, of Houston, of an old veteran of the Civil War to the State Hospital. . . . The patient had been "packing a loaded .38 caliber revolver and displaying certain Damascus blades or daggers," at the same time hinting ominously as to what would happen if certain critics of a local resident were not more complimentary. A friend of the old veteran remarked with some bitterness that the physician-jurors on the case were "more mentally awry than the poor old trapper and soldier."

Arthur Murphy Crandall was married to Lydia Wilhelmina Miller, of Iowa. Dr. and Mrs. Crandall had two sons, Keith David, a registered pharmacist, of St. Peter, Minnesota, and Lieutenant Riel Stanton Crandall, a graduate of West Point, who in 1941 was stationed at Schofield Barracks, Hawaii.

When Dr. Crandall left Hokah in 1903 for the purpose of studying at the Medical College of the University of Illinois, he was succeeded in the village by his classmate, Dr. George Robert Reay. In 1904 Dr. Crandall took his degree of Doctor of Medicine at the university and subsequently carried on postgraduate study in ophthalmology in Chicago. From 1905 to 1908 he practiced medicine in St. Paul Park, Washington County, and from 1908 to 1918 in Fairfax, Renville County, Minnesota. In the latter year he served as first lieutenant in the Medical Corps of the United States Army. In 1919 he settled in Madison, Lac Qui Parle County, where he has continued to engage in general practice.

Another **Dr. Crandall**, it has been said, was in Houston County, perhaps in the western townships, prior to Dr. A. M. Crandall's residence in the county, but direct evidence of his presence has not been discovered. It is probable that this practitioner was Dr. J. C. Crandall who, in 1880, was stationed at Witoka, some miles north in Winona County.

**Cassius B. Cranson** was a native of Michigan, born probably between 1845 and 1850, since it has been said that he served as a bugler during the Civil War, presumably as a youth, and that he enjoyed recounting his experiences in the army. Like many another physician of his period, he did not possess a medical degree when he began practice, but no doubt he had received training under a preceptor and later he studied at the Hahnemann Medical College of Chicago, from which he was graduated in 1885. In the same year, resident in the village of Sheldon, he was certificated in Houston County and practiced under state license No. 1022 (H), which was issued on March 30. From 1887 to 1891, four years, he was coroner of Houston County. After a few years in Sheldon he moved to the larger village of Houston, where for a year he was in partnership with Dr. De Costa Rhines. In the early nineties he moved to Montana and ultimately to California.

**Herbert D. B. Dustin**, an eclectic physician, came to Caledonia, a village of seven general stores, three drug stores, four hotels, thirteen saloons, six churches, and two newspapers, to name only part of the enterprises, in the late seventies, and found there as contemporary practitioners of medicine Drs. W. H. McKenna, George Nye, W. W. Freeman and J. S. O'Connor, and probably Dr. F. Castle. Dr. Dustin had his office over Belden's Drug store. In 1882 he was county coroner and also county physician; as the latter officer he optimistically agreed to furnish remedies and appliances for \$250 a year.

**Gustave Erdmann**, of the regular school of medicine, is said to have received his medical degree in Germany. In about 1881 he arrived in the village of Houston, where he engaged in the practice of medicine until some time in 1885, when he moved to Milwaukee. Dr. Edwin M. Sheldon, also a regular practitioner (listed at that time as an allopathist), was in Houston in the same period of the community's steady growth.

**Robert Y. Ferguson**, born on a farm near Hensall, Ontario, Canada, on October 11, 1871, was the son of Robert and Elizabeth Hood Ferguson, both of whom were natives of Scotland. There were four other children, Martha, Agnes, Margaret and Marion, of whom, in 1941, none was living.

Robert Ferguson obtained his early education in the country school near his

home and in the high school at Clinton, Ontario; in the interval between high school and medical college he taught in rural schools. In June, 1896, he was graduated, the honor student in his class, from the Detroit College of Medicine. A year later, having learned that Houston County, Minnesota, offered opportunity for a physician, Dr. Ferguson, accompanied by his young wife, Ella Guild Ferguson, of English and Scotch descent and a native of Exeter, Ontario, arrived in the village of Caledonia, where he at once entered into a widespread medical and surgical practice. His work, heavy from the beginning, soon was increased when, on Dr. Edmund B. Johnston's removal from Caledonia to Fairmont, Dr. Ferguson took over his considerable practice.

In Caledonia an early resident has recalled that Dr. Ferguson was held in high esteem, that he won confidence, that "he wanted everything just right," and that, a lover of dogs, he had in those years three which followed him so faithfully that he was known as "the doctor with the three dogs." In notes from Mrs. Ferguson, some of which have been used elsewhere in this paper, appears the following sentence, which is of interest in relation to her husband's practice and which also gives a highlight on the hazardous conditions of roads and weather that were encountered by all physicians of the community: ". . . There was nothing more of much importance outside of general practice during his stay in Caledonia, except escaping snowslides coming down from the bluffs in spring, or plowing through water in the valleys nearly up to our buggy box, with three dogs swimming hard to keep up with us, when I would accompany the Doctor on his calls." And again, with regard to a point of practice: "He always wore a heavy raincoat when taking care of contagious diseases and removed it on the back porch before entering his home. Such were the precautions taken in the early days."

Late in 1899 there came to Caledonia Dr. William E. Browning, brother-in-law of Dr. Ferguson, to enter practice, and for a time the two men were associated. Within 1900, however, Dr. Ferguson, having decided on a larger place as a permanent field of work, moved with his family to Pontiac, Michigan, where for many years he continued his career as a successful and respected physician and surgeon, distinguished for his contributions to public health, to improvement of hospitals and to organized medicine and no less for his constructive work as a member of the city's board of education and in all civic projects. He was a member of county, district, state and national medical groups.

Dr. Robert Y. Ferguson died in Pontiac on March 20, 1934, from cardiac disease after a long period of failing health, survived by his wife and the two children, Dorothy Ferguson Kotlin, of Royal Oak, Michigan, and Robert Gould Ferguson, of Pontiac.

*(To be continued in the November issue)*

# President's Letter

The councilors of the State Association held their third quarterly meeting in Saint Paul on September 9. It is noteworthy that so many past presidents of the association and various chairmen of important committees, as well as Dr. A. J. Chesley of the State Board of Health, were able, despite the multiplicity of duties, to be in attendance.

A very noteworthy contribution to the meeting was a discussion on the postwar status of the Veterans Bureau hospitals and facilities. One report came from the head of the Veterans Bureau hospital in Minneapolis, Colonel Bank, and it is well for you to know something about the situation that confronts our state in the matter of giving medical care to the veterans, of what we may now call all preceding wars. It was stated that from previous wars there is an aggregation of 118,000 veterans, and from this last war, a potential veteran patient group of 300,000. This foots up to an impressive total of 418,000. Colonel Bank gave the conditions under which veterans are entitled to treatment either under out-patient or in-patient service; also, the restrictions governing the determination of whether the disability arose "in line of duty," and the veteran's degree of indigency, since all veterans, regardless of the source of their disability, are given full service provided they state they are unable to pay for it.

By stretching as far as possible the present veterans' hospital bed capacity at Minneapolis, something over 808 beds may be made available. In addition, the out-patient clinic is said to be devoted largely to the physical examinations providing a basis or rating for pensions, etc. To accommodate the impending flood of veteran patients, it is planned to provide a downtown Minneapolis office, which will add something like 120 beds to the hospital space, but it will call for the whole-time service of fifteen doctors from the Facility and thirty-five additional doctors to staff this branch. Some five other branches are in the process of development requiring at least one hundred additional physicians. The big question that presents itself is this: Where are they to be found? It is suggested that the stipends or salaries and the Civil Service protection accorded the doctors in the Veterans Bureau may induce more and more men in the Service to voluntarily enter it. Opposed to this, however, is the obvious circumstance that every questionnaire answered by the men in Service, together with the pressing need for more civilian doctors, negate the suggestion that many men of the calibre everyone agrees should be available for veterans' care, will volunteer. There is the hint that if necessary, doctors already in the military service will simply take orders, then the bureau hospitals will enjoy the unenviable distinction of having a shanghaied medical staff.

It was further commented upon that one of the most pressing needs for medical care of the returning veteran concerns the relatively large group (estimated at least a half) needing attention for so-called psychoneuroses. Doctors suitably trained for that service are in even greater demand among the civilian population, and so the problem mounts. Furthermore, the veterans' bureau hospitals that have been built, it is agreed, were never intended to be used as "short-stay" active hospitals, but rather to give domiciliary care for chronic illnesses, including tuberculosis, insanity, and severe permanent crippling disabilities arising from wounds such as injuries to the back or spine. The recent report of the conference held at Hershey, Pennsylvania, summoned to consider the treatment of the psychoneuroses among the veterans, makes it very plain that this large group should be treated as closely as possible to their own homes; that internment in "long-stay" hospitals only exaggerates their disabilities and prolongs their incompetence.

With all this in mind, the councilors were very gratified with the preliminary report from Dr. A. W. Adson concerning the possibility that Washington may enact further legislation, through some liberal insurance plan, whereby the Government will pay the premium for the veteran as long as he lives; and that he may seek whatever treatment he needs through the regular civilian doctor and hospital of his own choice. The most lamentable feature dealing with any such plan is that offhand (at this preliminary stage) it sounds altogether too reasonable, too humane, and too economical to ever be put into action. However, let us all hope—and let us help.



President, Minnesota State Medical Association.

# Editorial

CARL B. DRAKE, M.D., *Editor*; GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

## TWO PROPOSED MINNESOTA CANCER SOCIETY PROJECTS

THE Minnesota Cancer Society, Inc., wishes to have any of its activities in this field of medicine completely approved and supervised by the medical profession. They have many willing workers in their Field Army and they collect many thousands of dollars annually, primarily for the purpose of educating the layman and providing refresher courses for the medical profession on the subject of cancer.

They are now anxious to have the medical profession approve and supervise two projects intended to further aid in the early detection of cancer through promotion of periodic medical examinations of apparently healthy women. This is hoped to be accomplished through free cancer detection clinics financed by the cancer society and rigidly controlled by the medical profession. Much misunderstanding now in existence among medical men throughout the state concerning the proposed cancer detection clinics can be cleared up by a careful review of the following rules and regulations of the clinics.

The second project is intended to reach thousands of women throughout the state through the mail, encouraging periodic examinations either by themselves or preferably by a physician. Rules and regulations of this enterprise will be found below. Both projects are to be voted upon by the council of the Minnesota State Medical Association.

It is the opinion of some physicians that the medical profession will have an opportunity to show its good will through extending their services to the people of Minnesota by approving and directing these two projects.

ARTHUR H. WELLS, M.D.

*Chairman of Cancer Committee*

### CANCER DETECTION CLINICS

of

The Minnesota Cancer Society, Inc.  
Under the Supervision of  
The Minnesota State Medical Society

#### Rules and Regulations

1. *Purpose*.—The purpose of the Cancer Detection Clinics is to provide periodic (semi-annual) examinations

for apparently healthy women with a view to the early detection of neoplastic growths, particularly in the breast and uterus. In addition, the clinics will be conducted as an educational enterprise promoting periodic physical examinations and disseminating facts accepted by the medical profession concerning cancer.

2. *Regulation*.—The Cancer Detection Clinics will be under the control of the Minnesota State Medical Association through its cancer committee. Before establishing a Cancer Detection Clinic at any location the local county medical societies' approval will be mandatory. The county medical society will be requested to set up a Cancer Detection Clinic committee or designate an already existing committee for the purpose, which will govern the local activities of the Cancer Detection Clinic. Any of the following rules or regulations may be altered to suit the local county medical society or its committee. Any revision of rules or procedures must be approved by the local medical groups. If in the minds of the state cancer committee or the local county medical society the purpose of the Cancer Detection Clinics is not being accomplished or for any other reason they may discontinue them in the state or county, respectively.

3. *Expenses*.—All expenses will be met by the Minnesota Cancer Society, Inc.

4. *Location*.—A clinic will be offered to each councilor district of the Minnesota State Medical Association for the local medical societies' acceptance or rejection. The office and examining rooms will be located in local hospitals or at some site acceptable to the local medical society.

5. *Examiners*.—Qualified women physicians not local practitioners and acceptable to the state cancer committee and the local medical society will be obtained for the examinations. These women physicians will be given a refresher course on cancer of the uterus and breast at the University of Minnesota.

6. *Advertisement*.—Women will be notified of the purposes and dates of the examination through local women's societies and local newspapers. Any such written notices will contain a phrase "under the supervision of (the appropriate) county medical society." Once examined by the clinic the patient will be notified by mail of appointments for subsequent semi-annual examinations.

7. *Patients*.—Apparently healthy women of different age groups and from various social classifications will be accepted without charge for the examination. Patients will not be accepted who are under treatment for cancer or for the obvious purpose of checking a local physician's or institution's recent physical examination. No woman will be accepted for the examination without first stating the name of her private physician or the charity hospital to which she must be referred. New patients may be accepted from time to time to fill the ranks of those who have discontinued coming to the clinic at the stated six-month intervals.

8. *Examination*.—A complete history and physical examination as related to the breast and uterus will be conducted. A superficial examination of the skin and mouth and questions related to general health will be included. If suspicious lesions are detected the patient

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is orally told of the nature but not the extent of the abnormality and sent to her family physician for further diagnostic procedures and treatment. No treatment, x-ray examinations or biopsies will be performed at the clinic. In all instances where there are suspicious neoplastic lesions the family physician is to be promptly given a report of the findings of the clinic by phone and if requested a complete written report will be sent. The clinic must follow up all such cases by phone or mail at approximately monthly intervals until they have either refused or have visited the physician of their choice.

The records of the examination shall be kept by the physician in charge of the clinic as in private practice. They will not be available to the Women's Field Army or to any other person.

Statistics gathered by the examinations must be organized and published by the examining physicians in MINNESOTA MEDICINE.

### Semi-annual Breast and Pelvic Examination Research Project Via Mail

#### Rules and Regulations of Project

**1. Purpose.**—The purpose of this research project is to collect the data from large numbers of women above the age of thirty scattered throughout the state of Minnesota concerning the presence or development of tumors in their breast and uterus. It is dependent upon a semi-annual examination by the patient herself or a physician. In addition, it is an educational enterprise promoting periodic examinations and disseminating facts accepted by the medical profession concerning cancer.

**2. Regulation.**—This research project is to be under the control of the cancer committee of the Minnesota State Medical Association. Any alterations or new rules which they wish to make concerning the project including a discontinuation of the project will be accepted by the Minnesota Cancer Society, Inc. If any county medical society should object to the program being conducted in their county or district it will be either altered to their complete satisfaction or discontinued in that locality.

**3. Expenses.**—All expenses will be met by the Minnesota Cancer Society, Inc.

**4. Location.**—The letters and blank forms will be mailed out from the central office of the Minnesota Cancer Society and will be mailed back to the same office to Dr. William A. O'Brien. The returned form will be the property of Dr. William A. O'Brien and its later disposition and usage for publication under his personal charge.

**5. Printed Matter.**—The letter mailed out to women throughout the state will contain the attached three articles: A return addressed envelope, a letter of explanation, and the blank form to be filled out by the woman receiving the letter. A fourth article to be included in the letter will be a pamphlet published by The American Society for The Control of Cancer, Inc., 350 Madison Avenue, New York City, entitled "Important Facts for Women About Tumors." These articles may be altered somewhat from time to time but if there is any important change in principle it must be approved by the cancer committee of the state medical association. Each blank form sent out will have a number on it which will identify the individual to which it is sent. If the form is not returned a second form will be mailed out within the next three months. Any publications resulting from this research project shall be published in MINNESOTA MEDICINE.

#### CANCER RESEARCH PROJECT

The Minnesota Cancer Society, Inc.  
In Association With  
The Minnesota State Medical Society

(Date)

(Miss)

Dear (Mrs.) \_\_\_\_\_:

As a member of the Minnesota Cancer Society you can play a very important part in an extensive research project which we are conducting. By helping us with this project, you will at the same time be protecting yourself against cancer. Your part is very simple but absolutely necessary for the success of this great effort to fight cancer through learning more about it.

A high percentage of cancer in women occurs in the breast or uterus (womb). This research project will be semi-annual examination and report on these two sites of cancer. You may perform the tests yourself or you may have a physician do the examination. We want to know the results, and we will send you a reminder and a form to fill out each six months.

You will accomplish an important means of protecting your life and your Minnesota Cancer Society will have accurate data as to the success of their fight against cancer. Do not procrastinate!

Fill out the enclosed form today or have your physician fill it out. Then mail it to us in the enclosed envelope. The simple instructions for the examination are on the reverse side of the form. You need not sign your name.

Sincerely yours,  
WILLIAM A. O'BRIEN, M.D.

Case No.:

#### RESEARCH PROJECT

Semi-Annual Breast and Pelvic Examination

Minnesota Cancer Society, Inc., and

Minnesota State Medical Society

Lowry Medical Arts Bldg.

St. Paul, Minnesota

(answer yes or no where possible)

My age is \_\_\_\_\_ years.

My weight is \_\_\_\_\_ lbs. Recent loss of weight \_\_\_\_\_?

My general strength is good — fair — poor —

Recent loss of strength \_\_\_\_\_.

#### Breast

Right breast:

Soft throughout \_\_\_\_\_.

Lumpy \_\_\_\_\_.

One hard mass \_\_\_\_\_.

Nipple drainage \_\_\_\_\_ Kind \_\_\_\_\_

Left breast:

Soft throughout \_\_\_\_\_.

Lumpy \_\_\_\_\_.

One hard mass \_\_\_\_\_.

Nipple drainage \_\_\_\_\_ Kind \_\_\_\_\_

#### Uterus

Menstrual History:

Usual time interval between onset of periods — days.

Recent change \_\_\_\_\_.

Any unusual bleeding \_\_\_\_\_.

Menopause (cessation of menses) — months — years —

Recurrence of bleeding (after menopause) \_\_\_\_\_.

Sensation of weight in pelvis (lower abdomen) \_\_\_\_\_.

Did a physician examine your breasts and womb? \_\_\_\_\_.

Was surgery performed? \_\_\_\_\_.

Was cancer present? \_\_\_\_\_.

Did our cancer education program result in your visiting the doctor? \_\_\_\_\_.

#### Breast Examination

The proper manner of examining your breast is to use the flat of your hand. Press the breast against the chest with a rotary motion carefully examining all parts of each breast. If there is any question about a small mass or lump, see your doctor immediately.

## HOSPITAL NEEDS

**T**HERE is a shortage in everything connected with hospitals except patients. Although the fighting is over, the adjustment of medical care to a peacetime basis will be a slow process.

Care of the sick and wounded has depleted the professional personnel of hospitals in general, and manpower shortage has greatly depleted their nonprofessional help. Various factors including easy money and hospital insurance have resulted in the crowding of hospital space.

A campaign to call attention to the needs of civilian hospitals was instituted September 1 by the Office of War Information, the American Hospital Association, the National Nursing Council for War Service, the United States Public Health Service, and the American Red Cross, in which radio and newspaper publicity will be utilized on a nationwide scale.

The seriousness of the hospital situation is not fully appreciated. As a result of a recent survey by the American Hospital Association, it has been found that 23 per cent of the hospitals in the country have closed beds due to personnel shortage; there is an acute nursing shortage in 65 per cent of the hospitals; there is need for an average of fourteen more nurses' aides per hospital; 52 per cent of hospitals report an acute shortage of non-nursing personnel with an estimated need for some 90,000 throughout the country. Some 45,000 volunteers are needed right now to relieve the shortage in non-nursing personnel.

Shortage of hospital space in civilian hospitals is not a recent development. The end of the war has not relieved the situation which is likely to exist for some time. We again call the attention of the profession to the need for limiting their requests for hospital beds for those patients who actually require hospital care.

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## CHIROPRACTOR BILL IN MASSACHUSETTS VETOED

**C**HIROPRACTORS have never been licensed in Massachusetts. A determined effort was made during the last session of the Massachusetts legislature to pass a bill licensing chiropractors and to set up a separate board of chiropractic to be presided over by chiropractors, which would pass on qualifications.

The bill was finally passed by the House and Senate after extended hearings only to be ve-

toed by Governor Tobin on July 20 on the grounds that "it would establish new and different standards of education and qualifications for applicants seeking to practice in a field in which minimum standards are already established by statute. Thus it would introduce into the statutory system a double standard for the selection of practitioners in the field of medicine."

Strangely enough, it was the medical profession and not the legislators who received most of the criticism because of the passage of the bill. It was felt in some quarters that the doctors were not as active and persuasive as their opponents. In other words, that the medical profession is responsible for blocking legislation detrimental to the public interests.

Undoubtedly, the various components of our citizenship have the responsibility to some extent of supplying information to legislators. Experience shows undeniably that the medical profession has to do more than simply supply information to legislators—we have to educate the public in medical matters and do so continuously if legislation in the best interests of the public is to be accomplished.

If the chiropractor bill had been enacted in Massachusetts, the state would doubtless have been forced to institute a Basic Science Board in order to exclude this group of poorly trained individuals from practice. Legalizing chiropractic supervised by a separate Board would have led to the licensing of other medical cults.

If we in Minnesota had been more active in the early days, chiropractic might have been excluded from Minnesota. The mere official licensing of a group of poorly trained medical cultists give them a certain official approval which fogs the judgment of the uninformed public.

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## POSTGRADUATE MEDICAL COURSES FOR PHYSICIANS RETURNING FROM SERVICE

University of Minnesota announces a special program of courses for physicians returning to civilian life, after having served in the Armed Forces. Tuition will be paid by United States Government and the necessary books will also be provided. Every GI (enlisted man or officer) is entitled to at least one academic year of training. Single men are given \$50 a month for maintenance, and married men \$75 a month while in school.

Students may live at the Center for Continuation Study on the campus. Housing for families may be a problem. Classes will be held in the Center, and at the Medical School; University of Minnesota Hospitals; Minneapolis General Hospital; Ancker Hospital, St. Paul; and affiliated institutions.

## EDITORIAL

### Program

#### 1. GENERAL REVIEW COURSES

Continuation courses in Medicine and the medical specialties (12 weeks), and Surgery and the surgical specialties (12 weeks). Lectures, demonstrations, conferences, and clinics. The faculty of the Medical and Graduate Schools in Minneapolis and St. Paul will be augmented by representatives from the Mayo Foundation for Medical Education and Research, Rochester, and by leaders from other medical centers.

Courses are arranged for general practitioners and specialists who have been practicing administrative medicine, and who now plan to return to clinical medicine.

Program will occupy the full time of the student. Returning veterans may register on any Monday when the program is in operation and continue until the series is completed. There will be one week intermission between the medical and surgical series.

The Kellogg Foundation, Battle Creek, Michigan, has made a special grant to the University of Minnesota to increase the number of full-and part-time faculty men to care for the increased enrollment, and Ancker Hospital, St. Paul, has been added to the regular teaching facilities for these courses. Register at the Center for Continuation Study on a special blank which will be forwarded on request. Prerequisites: graduate of approved medical school, completion of at least one year of internship, membership in county medical society.

#### 2. BASIC MEDICAL SCIENCES COURSES

Certification by one of the American Specialty Boards is the goal of all who plan to limit their practice. Each board requires the applicant to pursue special studies in the basic pre-medical sciences of anatomy, pathology, bacteriology, physiology, bio-chemistry, pharmacology, and others.

Veterans may register in courses in the pre-clinical departments to complete the requirements for the board for which they hope to qualify. In addition they will participate in the instructional program of the clinical department concerned, but they will not have patient responsibility or be required to assist in the operating room. At least two quarters of this program are recommended unless it can be completed in one. Register at the Center for Continuation Study. A special blank will be forwarded upon request. Prerequisite: Kellogg Courses, or exemption by petition.

#### 3. MEDICAL FELLOWSHIPS

The Graduate School offers opportunities for study and research in the Medical School, Minneapolis, and in the Mayo Foundation for Medical Education and Research, Rochester. The Degree of Doctor of Medicine and a year of internship are prerequisites for admission. These fellowships pay a small stipend during the period of training which may be collected by the veteran in addition to other sources of income (governmental). Upon satisfactory completion of all requirements, a Master of Science or Doctor of Philosophy Degree is granted by the Graduate School. The number of years for each program varies with the departmental requirement and the progress of the student. Register as a Graduate Student in the Graduate School with teaching appointment as medical fellow. Prerequisite: Arranged in each case.

#### 4. CLINICAL RESIDENCIES

To meet the demand for additional opportunities for advanced training, assistantships and residencies will be available in a number of hospitals and under recognized preceptors. These opportunities will be open to those who have completed the General Review Courses, basic medical sciences training, or other advanced training. Applicants for fellowships, residencies, and assistantships are considered when these places are open, so there is no advantage in having an advanced application on file. Register in the Graduate School with or without a teach-

ing appointment as a medical fellow. Prerequisite: Arranged in each case.

#### 5. INTERNSHIPS

Medical officers whose education was interrupted after one year or less of internship should consider the possibility of a senior internship as an ideal way of continuing medical education and then proceed from there.

#### 6. MINNESOTA STATE MEDICAL ASSOCIATION PLACEMENT BUREAU

Executive Secretary, R. R. Rosell, 493 Lowry Medical Arts Building, Saint Paul, Minnesota, has lists of locum tenens and assistantships with practitioners. Time spent as an assistant to a qualified specialist counts toward board recognition. In addition the Minnesota State Medical Association Office has a file of opportunities for those who wish to start private practice, purchase a practice, or secure a position.

#### 7. OTHER OPPORTUNITIES

Physicians desiring further information or in need of different courses are invited to write about their problems to

WILLIAM A. O'BRIEN, M.D.  
Director Department Postgraduate Medical Education,  
University of Minnesota Hospitals,  
Minneapolis 14, Minnesota.

Courses will probably start January 1, 1946, or sooner if the demand increases.

\* \* \*

#### State Medical Association Questionnaire

Supplementing the Postgraduate Medical Education Program offered by the University, a special Postwar Planning Committee on Veterans Affairs, appointed by the Council of the Minnesota State Medical Association, is preparing a questionnaire to be sent out immediately from the state office to all civilian physicians in the state to determine:

1. How many locum tenens opportunities under a general practitioner will be immediately available to returning medical officers?
2. How many diplomates will offer assistantships to a returning medical officer who is interested in a specialty?
3. How many physicians are looking for an associate on a permanent basis; on a temporary basis?
4. How many physicians are contemplating retirement, if a medical practitioner can be found to take over their practice?

This information will be invaluable in helping the returning medical officer to become re-established in a manner that will be most adaptable to his particular needs.

#### AMA Information Bulletin

In addition, the Bureau of Information of the AMA has issued a pamphlet entitled "Information Bulletin for Medical Officers," which gives a concise statement of facilities now available for returning medical officers. This pamphlet is designated to help them with their problems of licensure, further education and location in practice. It may be obtained by writing the Bureau of Information, American Medical Association, 535 No. Dearborn Street, Chicago 10, Illinois.

#### MALPRACTICE AND THE STAFF PHYSICIAN

There has long been a need for some authoritative work on malpractice as it affects the medical and dental professions. The number of malpractice suits brought annually should be a warning to the men in practice that their earnings and their professional rep-

utations are in jeopardy. When action is commenced or threatened, your insurance company should be notified immediately. Where resort is had to a competent lawyer whose training in the legal principles involved in every malpractice case may avert serious consequences, "An ounce of prevention is worth a pound of cure." This maxim has special application to malpractice and yet, how can the professional man prevent the calamity of a malpractice suit if he is in no manner informed of the principles which govern his conduct in the treatment of his patients? There are certain well defined principles which every physician and surgeon should not only know, but feel. They should become part of his equipment for the work of his profession. He should realize fully that with his privileges he assumes certain duties. He should understand what these duties are and he should ever have them in mind as he goes about his daily work.

There is no better way to avoid mistakes and errors than to know of the mistakes and errors which have caused other members of the profession trouble and expense. There has been marked advancement in medical and surgical knowledge from the crude methods of the barber and the apothecary to the modern methods in which learning replaces ignorance and science supersedes superstition. Your insurance companies have also kept pace with these modern developments and in reality are your silent partners. It is their duty to recognize changing attitudes toward social problems which have brought with them new legal concepts and decisions and a corresponding need for knowledge of the doctor's position as well as his rights and responsibilities.

In giving thought to this subject, it should be borne in mind that under our constitution, questions of fact in civil cases are usually tried to a jury. The jury in the very nature of things is composed of men untrained in scientific knowledge. It would be impracticable even if it were desirable to have a jury composed of professional men. This fact, in itself, should impress one with the necessity of exercising such a degree of care as will appeal to the layman as being reasonable. It should be understood in this connection that jurors are not allowed to say, from their knowledge or lack of it, whether certain conduct is reasonable or not. Jurors can only act on evidence. They are presumed to know nothing of the case and unless in malpractice cases the plaintiff introduces some evidence (usually it must be expert evidence) to show that the treatment complained of was not proper, the court will not allow the jury to pass on the case no matter how unfortunate may be the result of the treatment.

This will explain the rulings in many cases in which judgment of the lower court is reversed because the evidence is held insufficient to present a case for the jury to decide.

The burden of proof is always upon the plaintiff to establish negligence or want of skill, and negligence or want of skill must be established by the preponderance or greater weight of evidence; but if the plaintiff produces any substantial evidence of negligence,

then it becomes the duty of the jury to weigh the evidence and pass on the credibility of the witness.

The rules of law governing these cases are not statutory nor local. They are principles of common law and applicable and enforceable in every state in the Union. There should be no misunderstanding as to the hospitals' position in cases of this nature. While the hospital is usually absolved from liability for the carelessness or malpractice of its medical staff, the physician does not enjoy such immunity. The doctrine which makes the master responsible for the wrongful acts of its servants does not govern the relationship between the hospital and the physician; the physician alone is responsible for his negligent conduct. One of the duties of the governing body of the hospital is to see that proper professional standards are maintained. They have an obligation to the community for the appointment of a competent medical staff. The governing body therefore must select and appoint a medical staff to accept the responsibility for the treatment of patients admitted to the hospital. It is essential for the governing body of the hospital to comply with the minimum standards of the American College of Surgeons with reference to the restriction of staff membership if the institution is to be accredited by the College. The governing body may refuse to permit physicians professing certain systems of medicine to practice in the hospital.

Without question, the hospital may exclude persons not possessed of an M.D. degree from treating hospital patients; only registered physicians and qualified registered nurses may be permitted to supervise the work done within the institution. Osteopaths, chiropractors may be kept out; even those who possess a medical degree need not be permitted to practice in the hospital if they are of questionable ability and uncertain ethics.

While standards of practice should originate with the medical or professional departments, the limitations, control and execution must be in the hands of the governing board. Staff restrictions for the purpose of raising the standard of medical care and to accommodate a given hospital's facilities or to carry out its dedication to a special field of service, unquestionably are proper and lawful. The hospital may dismiss those guilty of important infractions against the ethical conduct of medical practice, for offensive attitudes toward patients, the public and professional colleagues as well as for incompatibility with the purpose for the fulfillment of which the hospital is responsible to the public.

DON C. HAWKINS, Executive Assistant  
St. Paul Mercury Indemnity Co.  
St. Paul Fire and Marine Insurance Company

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Prolonged malnutrition is a much more serious medical problem than famine, because it leads to diseases of low resistance, the chief of which is tuberculosis, and to conditions which may take several generations to remedy.—LORD HORDER, J.A.M.A., May 6, 1944.

# MEDICAL ECONOMICS

Edited by the Committee on Medical Economics

of the

Minnesota State Medical Association

George Earl, M.D., Chairman

## VETERAN REHABILITATION PROGRAM CLOSELY ALLIED WITH CIVILIAN PRACTITIONER

The important rôle of the medical profession in any program of veteran rehabilitation is the gist of an editorial appearing in the *Wisconsin Medical Journal* for September, 1945, by Leo B. Levenick, director of the Veterans Recognition Board in the Wisconsin Department of Veterans Affairs.

Colonel Levenick knows whereof he speaks for he is a veteran with twenty-four and one-half years military service, with overseas service in two wars. He speaks out plainly about the changing order that has supplanted a bonus or gratuity for military service by legislative acknowledgment on the part of federal and state government that long-term rehabilitation is the obligation of the "defended to the defenders."

Restoration, in so far as possible, to pre-service health is fundamental, he declares, and the returning World War II veterans who have so gallantly represented us on at least seventy-five fronts in this global war, offer a tremendous challenge to the best the medical profession affords. The demands on the practitioner will not be confined to his skills in healing procedures but will also draw heavily on his revered function as a personal counselor, he believes.

Most practitioners, the editorial points out, will agree on the necessity for establishment of uniform practices in the medical economics phase of such a program of veteran rehabilitation. A large portion of the fees will be paid from public funds, and it would seem that standards established for other special groups might well be studied with a view to their application to veterans receiving treatment and care is the opinion of Colonel Levenick.

Another point underscored is the importance

to the veteran of complete clinical records by his personal physician. The residuals of injury or disease incurred in or aggravated by service may appear at some future time and the veteran's entitlement to federal pension or other benefits may depend upon the accuracy and detail of his personal physician's case record. In case of death, the amount of benefit accruing to the veteran's surviving dependents may likewise depend on the medical and clinical records.

Colonel Levenick holds the opinion, which seems to be shaping up as the deliberate judgment of Army and Navy officials, that as the returning veterans become integrated again into civilian life, civilian practitioners in their home communities will find themselves increasingly important as instrumentalities for rendering both counselor and medical services to veterans and their families.

## Insurance System Proposed for Veteran's Medical Care

A plan for abandoning the present system of veterans' hospitals and substituting an insurance system providing veterans with medical and hospital care in their home communities is under consideration by the senate military affairs committee.

The proposal was worked out by Colonel W. Paul Holbrook, of the Army Air Corps. Colonel Holbrook has reported to the committee that it is the opinion of many persons in the medical profession, that with civilian medical care restored, there will not be enough qualified doctors and surgeons in the country to staff a new chain of veterans' hospitals under plans now being contemplated.

Colonel Holbrook has proposed the government maintain only a certain number of hospitals where highly specialized care can be given to

veterans in need of it. For all others, he suggests that the government provide a medical care and hospitalization insurance policy up to a stated value. This would enable a veteran needing ordinary care and attention to go to a hospital or a physician in his own community or in some nearby city if he preferred.

If the local physician felt the veteran required more specialized attention, he would then be admitted to one of the proposed veterans hospital centers.

### REALISM IN PUBLIC RELATIONS

Now that we begin the postwar period and we leave the turmoil of war for the adjustment to peace, what will be the direction of the changing order of things? In the course of events to come, medicine must shape its programs with care and give voice to its opinions.

There is an increasing awareness on the part of men of medicine that respect, confidence and loyalty on the part of an informed public is its greatest ally in preserving the integrity of the great institution of medicine and maintaining high standards of medical care.

Since most of the public relations problems of the medical profession seem to be linked with medical economics, the profession everywhere is devoting much of its time to a consideration of this subject.

### Michigan Scores With Its Program

It has been clearly demonstrated in Michigan that if the profession takes the initiative, it will meet headon and render ineffective the highly articulate campaign of proponents of state medicine.

In a paper read before a conference of County Medical Society Secretaries of the State of Pennsylvania last January, Dr. L. Fernald Foster, Secretary of the Michigan State Medical Society, gives a graphic account of what has taken place in that state to bring realism into its public relations program.

We quote from a portion of that address, as it was published in the February, 1945, issue of the *Pennsylvania Medical Journal*.

"Some means of making it easier for the average person to pay for the doctor's services seemed a desirable thing, and so we in Michigan set out to study it. We sent representatives to England to examine

the system in use there and we made numerous other analyses and investigations. The culmination was the launching in March, 1940, of our own State Society sponsored prepayment plan.

"It seems to me that inauguration of this program has had more to do with influencing the profession's public relations in Michigan than anything else in recent history.

### Objectives Must Be Based Upon Known Facts

"... To be sound, objectives must be based upon known facts. So far as our public relations were concerned, we did not have enough facts. We had started a medical care plan and the plan had achieved a substantial degree of public acceptance.

"But, after all, were we simply trying to stem an irresistible tide? The various national surveys had shown repeatedly that a heavy majority of the people—almost an overwhelming majority—were in favor of compulsory, state-controlled health insurance. How did we know that they were not merely accepting our plan as a temporary substitute to be abandoned in favor of a state program as soon as possible? Maybe we were deluding ourselves. Maybe we were gratuitously undertaking a job that nobody really wanted us to undertake.

### Survey of Public Opinion Undertaken

"The Health Council (a public relations organization set up two years ago representative of the State Medical Society, State Hospital Association and other organizations concerned with human health) set out to try to get the answers, to ascertain the state of public opinion regarding the medical profession, the hospitals, and the prepayment plans. The general research bureau of one of the nation's largest advertising firms was hired for the purpose of conducting a wholly objective survey according to the best scientific principles. I believe that our profession everywhere can take pride and renewed hope from the survey's results.

### Results of Survey Gratifying

"Reduced to the simplest terms, the survey told us a few fundamental and extremely significant facts. First of all, it brought us an overwhelming vote of confidence from the public. Second, it outlined those practices within the profession to which the public most commonly takes exception. Third, it told us that the people are looking not to the government, but to us, to take the initiative in matters of health care. Fourth, it informed us that, if we do take the initiative in a constructive sense, government medicine won't stand a chance.

"It is my conviction that this 'directive' from the people has greater and more permanent validity than any emanating from Washington. We know in advance that we have the people with us. All that we need to do is go ahead along the lines indicated.

"... To determine the general public attitude toward the medical profession as a whole, the question was asked: 'If you were advising your son or another young man on a career and he were qualified and

interested, would you advise him to go into the medical profession?" Eighty-one per cent of the people thought enough of the medical profession to recommend it as offering a good career to their own sons. Even more direct was the question: "What is your opinion of the doctors of medicine? As a group do you think they are doing a good job for the public?" Nearly 92 per cent of the people offered an outright 'yes' in answer to this question.

"As an indication of some of the complaints voiced by the persons interviewed, 28 per cent said that they did not believe doctors of medicine are as honest as they should be in all dealings with patients, 20.5 per cent felt that they had to pay too much for the doctor's services, and various percentages protested certain other practices and conditions.

### **Significant Findings**

"Public sentiment as it affects prepayment plans under various auspices was brought out through a series of questions. The survey showed that 79 per cent of the people who are eligible to obtain prepayment service through their places of employment actually have enrolled for this service. Surely this is an indication of the extent of the demand. Nearly a third of the people said that the availability of a prepayment plan would be a deciding factor in their choice between two jobs.

"In answer to the question 'Do you think we should have some sort of a government-operated medical-hospital plan?' 39 per cent of the people of Michigan voted 'yes' and 43 per cent voted 'no', with 18.5 per cent undecided. This is a decided variation from the aforementioned national surveys which showed heavy majorities of the people favoring a governmental plan. In other words, the deviation from the national trend substantiates our belief that the rapid growth of the voluntary program in Michigan indeed has had a beneficial effect. It seems to me that this is a very significant point.

"Finally, for the most conclusive findings of all, there were the responses to the question asking the people what type of program they would prefer if they had a choice. Thirty-four per cent voted for voluntary, professionally sponsored prepayment plans. This was more than twice the percentage which voted for any other type of prepayment. Government-controlled prepayment, for example, drew a vote of only 15.5 per cent when the people were allowed to choose. Regular insurance drew a 13.4 per cent vote. The vote for union-controlled prepayment was less than 1 per cent; 10 per cent of the people were undecided; and slightly more than a quarter of the people (26.6 per cent preferred simply to pay for care at the time rendered.

"As one of the final questions, the survey asked whether the people would advise their sons to go into the medical profession if it were under government control. As against the 81 per cent vote for medicine as the profession is today, there was only a 45 per cent vote for medicine as a career should it become subject to governmental control.

### **Our Profession Must Become More Vocal**

"One additional survey finding seems pertinent. This was the evidence that less than 25 per cent of the people of Michigan had ever heard of a medical service plan sponsored by the profession. If we had flattered ourselves that we were doing a good job in informing the people about our own medical care plan, that report deflated our impression. Moreover, it supported our growing feeling that our profession is going to have to become more vocal. Many of the subscribers enrolled in Michigan Medical Service actually do not know that this nonprofit program for their protection was organized and is sponsored by the doctors themselves. If they do not know this—if they do not appreciate this and the other activities voluntarily undertaken by the profession in their behalf—how can we expect them to support us when we say that government medicine is not necessary because we voluntarily have developed methods for serving the same ends?

"It seems to me that many of us have sensed these things. We cannot pick up the newspapers and read articles casting discredit upon the medical profession without knowing that we have a public relations problem. We cannot help but notice the dearth of articles crediting the profession for its positive accomplishments. We cannot help but notice that most of the furor has arisen about economic, distributional, and organizational questions. We cannot help but compare the well-organized and highly articulate campaign of proponents of state medicine with the relatively unorganized and inarticulate activities of the free American medical profession. And if we believe in democracy—if we believe that the people will make the right choice if they have the information enabling them to choose intelligently—we must know that we are going to have to do a great deal more to get information about our profession to the public.

### **We Know the Demand**

". . . I think it is true that further surveys are not necessary to tell us what our broad policies should be. I think that most of us now know what has happened to the American scene to require constructive adaptation by doctors collectively and individually. We don't need science to reiterate these things; our own eyes and ears tell us the same story. For a dozen years the people have been seduced with promises of Utopia on a gold platter. These promises would have received scant attention if there had not been need for the adjustment of certain social and economic inequities. There was, for example, no demand for prepayment plans forty years ago; today we know that this demand is very strong.

"For generations the American medical man has been able to immerse himself in the scientific aspects of his profession. Everything he has done, all the policies and practices he has established, have been developed in the light of that one all-absorbing purpose.

### **New Responsibilities**

"Now we find that, more or less suddenly, we are suffering the intrusions of other interests. Naturally,

we do not like this distraction. We would give a great deal to be allowed to continue as we have in the past. It seems perfectly clear that we are not going to be allowed to do so. The handwriting is on the wall in large and bold characters. Either we accept new responsibilities, and accept them at a time when we are hard pressed to meet even the more urgent of the demands of our time, or we are going to have the freedom which made American medicine great taken entirely away from us.

#### Promise of Progress in Public Relations Seen

" . . . Recapitulating, I believe that our profession is now confronted with the promise of progress in public relations comparable to our past progress in scientific practice. We are beginning to know the things that we should do to serve the best interests of the free medical profession and of the public, and we are finding that the interests of the two are practically identical.

"Our survey has told us in Michigan to continue our support of Michigan Medical Service, to extend the service, as rapidly as possible to as many people as possible, and to make the service as comprehensive as is practical. It has encouraged us in our co-operative effort to tackle some of the unsolved problems of health care in conjunction with the hospitals and our allied professions. It has advised us to tell the story of our profession not only by radio programs but by other means as well.

" . . . I suppose that after all, the problem of public relations is the problem of human relations. . . . Like good health, good human relationships cannot be maintained by a passive attitude but can result only from constructive works. I am convinced that we in the medical profession must work fast, for there is much work to be done, but I am heartened by the evidence throughout the nation that that is exactly what we are starting out to do."

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#### MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

**Julian F. Dubois, M.D., Secretary**

##### Minneapolis Man Sentenced for Theft of Cocaine

*Re State of Minnesota vs. Dutton Ray Miller*

On May 4, 1945, Dutton Ray Miller, twenty-four years of age, 1609 Linden Avenue North, Minneapolis, was sentenced by the Hon. William A. Anderson, Judge of the District Court, Hennepin County, to a term of not to exceed five years in a state penal institution. Judge Anderson provided in his order that after the defendant had served ten months in the Minneapolis Workhouse, that he be released and placed on probation for four years. However, it has been learned that Judge Anderson ordered the defendant released from the Minneapolis Workhouse on August 23, 1945, and he is now at liberty in Minneapolis.

Miller was arrested on March 11, 1945, following the theft by him of four bottles containing six fluid ounces of cocaine hydrochloride, one bottle of cocaine hydrochloride crystals, a syringe and hypodermic needles from Abbott Hospital, Minneapolis. At the time he was sen-

tenced, Miller told the Court that he had served two years in the United States Army and received a bad conduct discharge; that he acquired the narcotic drug habit while under shell fire in North Africa and Italy. Miller has a criminal record dating back to 1933, when he was adjudged a dependent child in the Juvenile Court in Minneapolis, and since that time has been arrested on over twenty occasions, mostly for trivial offenses. However, in April, 1941, Miller was sentenced at Ivanhoe, Minnesota, to a term of two years in the State Reformatory for burglary in the third degree.

Miller is 5 feet 10 $\frac{1}{4}$  inches in height, weighs 149 pounds, has blond curly hair and blue eyes. He has no particular occupation but has done work as a painter and a laborer. He is unmarried. Members of the medical profession should not, under any circumstances, dispense, administer or prescribe any of the derivatives of opium to this defendant. If any such request is made, the matter should be immediately reported to either the Minnesota State Board of Medical Examiners, the Federal Bureau of Narcotics at Minneapolis or the Probation Officer for Hennepin County.

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##### Minneapolis "Detoxification Experts" Plead Guilty to Illegal Practice of Healing

*Re State of Minnesota vs. John P. LeMay  
Re State of Minnesota vs. Florence LeMay*

On September 11, 1945, "Dr." John P. LeMay, also known as "Rev." John P. LeMay, thirty-five years of age, who holds no license to practice any form of healing in the State of Minnesota, and his mother, Mrs. Florence LeMay, fifty-eight years of age, also minus a medical license, entered pleas of guilty in the District Court of Hennepin County, to an information charging each of them with practicing healing without a basic science certificate. LeMay and his mother were arrested by Minneapolis Police officers on July 3, 1945, following a joint investigation by the Minneapolis Police Department and the Minnesota State Board of Medical Examiners into the activities of both defendants. A twenty-three-year-old Minneapolis stenographer had reported to the Medical Board that she had paid LeMay \$89.50 between September 29, 1944, and April 26, 1945, for so-called "detoxification" treatments which consisted of an enema lasting about an hour. The patient also stated that she received two kinds of medical pills from LeMay. LeMay's undoing resulted from his attempting to prescribe a diet for the patient. The patient upon receiving the diet list, showed it to her grocer, and he suggested that she see a reputable physician. The matter was then referred to the Minnesota State Board of Medical Examiners, resulting in the arrest of both LeMay and his mother by Deputy Inspector Eugene Bernath and Detective Eugene Dougherty of the Minneapolis Police Department. Prior to the imposition of sentence, a letter was furnished to the Court stating that Mrs. LeMay had suffered a stroke of apoplexy in June, 1945, and had a blood pressure of 220/136. An appeal was made for probation because of Mrs. LeMay's health and the necessity of her son's supporting her. After a thorough discussion of the matter with the County Attorney's office of Hennepin County and a representative of the Minnesota State Board of Medical Examiners, Judge E. A. Montgomery sentenced each defendant to a term of one year in the Minneapolis Workhouse and stayed the execution of sentence for one year with both defendants being placed on probation, on condition that they refrain from practicing healing in Minnesota in any manner and abide by all of the laws of the State.

At the time of the arrest of these defendants at Suite No. 416 Medical Block, 608 Nicollet Avenue, Minneapolis, it was discovered that LeMay had on display, in his office, the license to practice medicine and

the basic science certificate formerly held by a Minneapolis physician who died in January, 1944. The patient in the instant case made inquiry for this physician and was treated by John P. LeMay in the belief that he was the licensed physician whose license was on display. The medical license and basic science certificate were seized, along with medical instruments and records, by the Minneapolis Police Department. Shortly after LeMay's arrest, he caused a sign to be placed on the same suite announcing that he was running a Christian Health Center and listing himself under the name of "Rev. John P. LeMay, Director." This sign was immediately removed when called to the attention of the authorities. LeMay was arrested twice previously in Minneapolis, once in 1937, and again in 1942, on moral charges, and was sentenced to the Workhouse on each occasion. LeMay stated that he was born in Duluth and studied for eight months in a Minneapolis Chiropractic College where he claims to have received a certificate in physiotherapy, after paying a fee of \$80.00. LeMay has worked in several places as a masseur, and his mother was formerly employed as secretary by the Minneapolis physician whose license was found on display in "Dr." LeMay's office.

A licensed physician, with whom LeMay was associated at the time of his arrest, has been cited to appear before the Minnesota State Board of Medical Examiners to show cause why his license should not be suspended or revoked for aiding and abetting the LeMays to practice medicine illegally. The Minnesota State Board of Medical Examiners wishes to acknowledge the splendid co-operation received in this case as well as in several other cases, from Chief of Police Ed. Ryan, Inspector Mullen, Deputy Inspector Bernath and Detective Dougherty, all of the Minneapolis Police Department.

#### Federal Court Revokes Probation of Minneapolis Drug Addict

*Re United States of America vs. Helen Geneva Rudd*

On July 9, 1945, the Hon. Gunnar H. Nordbye, United States District Judge, at Minneapolis, revoked the probation previously granted to Mrs. Helen Geneva Rudd, forty-six years of age, 5156 Nokomis Avenue, Minneapolis. Judge Nordbye ordered Mrs. Rudd committed for three years in a penal type institution and the defendant has been taken to the Federal Woman's Reformatory at Alderson, West Virginia, to serve her sentence.

Mrs. Rudd is well known to the medical profession of Minneapolis under many aliases. She was released on March 24, 1945, from the United States Hospital at Lexington, Kentucky, for narcotic addicts. Seven days later she was attempting to get morphine and dilaudid from a Minneapolis physician. She assumed the name of "Mrs. Bernice Johnson" and posed as a nurse. Several Minneapolis physicians were victimized by her misrepresentations. Mrs. Rudd has a long criminal record and a twenty-year history of drug addiction. On September 27, 1934, Mrs. Rudd pleaded guilty in the United States District Court at Minneapolis to an indictment charging her with a violation of the Harrison Narcotic law and was given a suspended sentence of eighteen months in a Federal penal institution. The sentence was suspended and the defendant placed on probation for a period of two years. Mrs. Rudd violated her probation and on May 1, 1936, was committed to the Federal Woman's Reformatory at Alderson, West Virginia. On July 7, 1938, Mrs. Rudd was again arrested in Minneapolis and charged with violating the Minnesota Uniform Narcotic law. She attempted to plead guilty, but the Court would not accept the plea for the reason that the defendant stated she did not remember her conversation with the physician from whom she obtained the morphine. The case proceeded to trial and the jury returned a verdict of

not guilty. On January 14, 1943, Mrs. Rudd was again arrested by officers of the Federal Bureau of Narcotics, entering a plea of guilty on March 2, 1943, in the United States District Court at Minneapolis, to an indictment charging her with four separate violations of the Harrison Narcotic law. All four violations consisted of forging medical prescriptions for narcotic drugs. On April 2, 1943, the defendant was placed on probation for a period of three years upon the express condition that she be taken to the Government Hospital at Lexington, Kentucky, for treatment for drug addiction. It was for a violation of this probation that Judge Nordbye again ordered the defendant incarcerated in a penal type institution.

The facts concerning this case indicate extreme carelessness by certain members of the medical profession in the furnishing of narcotic drugs to Mrs. Rudd. The Minnesota State Board of Medical Examiners has previously warned the medical profession, through an article in MINNESOTA MEDICINE (November, 1938) to refrain from administering, dispensing or prescribing any narcotic drugs of any kind for this woman. There can be little excuse for a physician dispensing or prescribing any derivatives of opium to Mrs. Rudd. She is an addict of many years' standing and the exercise of ordinary caution would preclude any physician from prescribing for her. The following is an extract from the admonition previously published by the Medical Board concerning Mrs. Rudd:

"The State Board of Medical Examiners urges every physician to refrain from administering, furnishing or prescribing morphine for this woman. If a call is made for a physician, he should insist on a complete examination, including X-ray, and hospitalization, if necessary, before any narcotic is given."

If that admonition had been followed, Mrs. Rudd could not have obtained any of the derivatives of opium. A physician should be immediately upon his guard the moment any patient suggests that a derivative of opium, whether it be morphine, dilaudid or any other narcotic preparation, is the only medication that will relieve the patient. Drug addicts, without exception, always indicate the type of medication desired by them. There has been much criticism of the medical profession by the Federal Bureau of Narcotics, and others, for laxity in the dispensing and prescribing of the various derivatives of opium. Much of the criticism is well founded. Unless there is an improvement in this regard, it will be necessary for the Minnesota State Board of Medical Examiners to institute disciplinary proceedings by way of suspension or revocation of the medical license of those physicians involved.

#### MORE ABOUT RH

Dr. Philip Levine, one of the original researchers of the Rh factor, points out in the *Journal of the American Medical Association* (July 28) that erythroblastosis fetalis is almost twice as common among women with Rh negative blood who sometime during their lives have had a blood transfusion. He states, "Obviously, the transfusions induced an immunized state of the antibody producing cells so that many years later with the very first pregnancy there already was sufficient intrauterine blood destruction to produce fatal forms of erythroblastosis fetalis."

Then he adds, "These findings support the recommendation that no transfusion be given to young women, girls or even female infants unless tests for Rh are carried out. All those found to be Rh negative must receive Rh negative blood."

For some women who never had a blood transfusion in their lives but whose first baby had erythroblastosis fetalis, Dr. Levine states, "The possibility that the immunization in these women may have been initiated many years previously by the common practice of administering blood intramuscularly, particularly to the newborn." This procedure was formerly used to combat the hemorrhagic disease of the newborn. Since the introduction of vitamin K, however, this practice has been discontinued.—*Briefs*, October, 1945.

# Minneapolis Surgical Society

Meeting of April 5, 1945

The President, Daniel MacDonald, M.D., in the Chair

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## THROMBOEMBOLISM

GEZA DE TAKATS, M.D.  
Chicago, Illinois

The recent interest in thromboembolic phenomena, in their prevention and treatment, arises from several sources. First it has become obvious that thrombi, especially in the lower leg and foot, are frequent and that they impressively contribute to the morbidity and mortality of medical and surgical diseases. This is worthy of emphasis, since ten to fifteen years ago the general attitude of the surgical clinics was that of minimizing or deprecating any effort directed toward prevention or therapy of thrombosis. It hardly ever seemed to occur and if a patient did die of thromboembolism this was considered to be a rare, unpredictable and unpreventable event. Today the profession has become embolism-conscious even though it is highly debatable whether the incidence of thrombosis has really increased in the last few decades. It is certainly true that we are treating a much older and a more handicapped group of patients than were cared for in former years, and this in itself may be responsible for the seeming rise in the incidence of thrombosis.

But unquestionably our methods of diagnosis have improved. Payr in 1930 in a short, classic article stressed the importance of the pressure-points on the sole of the foot denoting plantar-vein thrombosis. Homans is responsible for the valuable dorsiflexion sign which has done so much to facilitate the early diagnosis of the thromboses of the lower leg. Phlebography with its attendant pitfalls and some drawbacks gives information in the doubtful case, but is certainly unnecessary in the majority of patients. The possibilities of venous-pressure measurements and determination of circulation times have not been sufficiently explored. The best method is still a close inspection and palpation of the suspected limb, preferably in the sitting position with feet hanging over the edge of the bed. Slight cyanosis, edema, and filling of the superficial veins of the foot may be more obvious than in the horizontal position. Also the calf may be more tense and warmer than its fellow without any actual change in measurements. For those who claim that some thrombi may be entirely latent and yet be emboligenic one might say that about 50 per cent of the adult population harbors thrombi in the calves of the leg and certainly most of these patients never throw emboli.

The third cause of increased interest and discussion in this field stems from the advocacy of different forms

of treatment which are pushed with considerable vigor by their proponents. It is interesting to note, however, that all of these measures are finally relegated to a place which fits them and where they remain as part of our armamentarium. Thus it is my impression that vein division, sympathetic block, and anticoagulant therapy all have their indications, but there is no reason to ignore one for the benefit of another. They should support instead of excluding each other.

### Prevention of Thrombosis

There is no need to belabor the point that slowing of venous circulation favors thrombosis. With few exceptions most surgeons will advocate breathing exercises, flexion and extension of the knee and ankle. The Trendelenburg position has been routine with us for many years and the typical Fowler position is discouraged. It is also obvious that if patients are allowed to get out of bed one or two days after operation, their circulatory status improves. It must be emphasized, however, that this retardation of blood flow is *never* the actual exciting cause of thrombosis. There are plenty of ambulatory patients with deep venous thrombosis; there are patients developing postoperative thrombosis who were out of bed the day after operation. The slowing of circulation operates most conspicuously as a localizing agent of thrombosis to points of venous constriction such as occur in the foot, at the ankle, at the upper edge of the soleus muscle, and at the inguinal ligament. However, blood may remain fluid between two ligatures if they are carefully placed so as to avoid endothelial damage. Auricular stasis in a fibrillating auricle may persist for years without producing thrombosis. Venous stasis, then, is a factor but certainly not the sole factor in the production of a blood clot.

Endothelial injury, a break in the smooth lining of the intima is an accepted cause of thrombosis. Mechanical, thermal or electric injuries of blood vessels are followed by thrombi, usually localized to the site of injury. An ankle sprain, a blunt soft-tissue injury may be the starting point, however, of a spreading type of thrombosis or one that is emboligenic. Infections may affect the vascular lining; especially notable for their affinity to the vascular endothelium are typhoid fever, virus pneumonia and malaria. Attention should also be called to the curious allergic response of the blood vessels which operate in panarteritis nodosa and very probably in the migrating attacks of phlebitis and arteritis of Buerger's disease. The sulfanilamides and the state of serum sickness may elicit such vascular hypersensitivity.

Prophylaxis against such a mechanism in our daily surgical practice is obviously impractical at present. Attention should be called, however, to the fact that

From the Department of Surgery, University of Illinois College of Medicine, and the Fourth Surgical Service, St. Luke's Hospital, Chicago.

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surgical trauma may represent a sensitizing factor in bringing about thrombosis; a simple venipuncture in patients suffering from acute thromboangiitis obliterans may bring about a long segmental thrombus. For the same reason patients suffering from an active stage of Buerger's disease or a migrating phlebitis should not be subjected to sympathectomy or amputation until the process becomes quiescent.

The third factor in the production of thrombosis is the increased tendency to blood clotting. This state may be present as a result of dehydration, plasma-loss, increased cell count, all of which raise the hematocrit; it seems to be present in the active stage of Buerger's disease, after many infections, in digitalis poisoning, but more importantly for the surgeon in the postoperative state. Owing to the destruction of platelets and the trauma to tissue, so much thrombokinase is liberated that platelets agglutinate and the process of thrombosis is initiated.

The fact that every major operation creates a clotting tendency is not sufficiently appreciated or is still ignored. True enough, a determination of a bleeding time or coagulation time is not sensitive enough to demonstrate it. There are, however, two tests which are capable of showing the effect of a major surgical operation on the clotting mechanism; the prothrombin level and the test for heparin tolerance.

Prothrombi times are now available in most hospital laboratories but their accuracy leaves much to be desired. Great confusion exists because of the numerous modifications of the original method of Quick; new batches of thromboplastin have to be made up and tested against normal controls. At present our laboratory is using the Quick prothrombin time on 12.5 per cent plasma, that is in plasma diluted eight times. With this method one cannot only detect a hypo- but also a hyperprothrombinemia. However, the end-point is difficult to read and the interpretation of shorter than normal prothrombin times is unclear. The levels must be watched daily by the resident staff; the same technician must run the tests in order that they can be relied upon.

From the foregoing it seems as if this important laboratory test is not quite ready to aid the general surgeon. One looks forward to a simplification and standardization of the method.

The heparin tolerance has been developed with the idea that its simplicity will make it more available to the average laboratory worker. It is based on the observation that the response of patients to heparin varies in the individual patient. A small test dose of heparin (one cubic centimeter, containing 10 milligrams) is injected intravenously. Coagulation times determined with a capillary tube are obtained before and ten, twenty and thirty minutes after the injection. The normal response to heparin is somewhat like 3.5, 5, 6, 3.5 minutes, and each individual seems to maintain his own tolerance curve taken day after day. While venous coagulation times show an identical trend, they require four venipunctures in thirty minutes, where the capillary coagulation times are taken from a finger-prick and are quite satisfactory. The patient who for some reason

has an increased clotting tendency shows a diminished or absent response to heparin. The coagulation times remain at the initial level or rise very little.

Table I illustrates the factors which have been so far investigated in regard to their influence on the response to heparin.

TABLE I. FACTORS INFLUENCING THE RESPONSE  
TO HEPARIN

<i>Decreased Sensitivity</i>	<i>Increased Sensitivity</i>
Postoperative state <sup>1</sup>	Sulfur compounds (sodium tetrathionate, sodium thiolsulfate sulfanilamides?)
Acute thrombosis <sup>2</sup>	Prostigmine (or other parasympathetic stimulants)
Buerger's disease (acute phase)	Dicoumarol <sup>3</sup>
Polycythemia	Digitalis (small doses)
Severe burn, sudden dehydration	Hepatic damage
Acute hemorrhage	
Severe trauma	
Adrenal stimulation	
Anxiety? Fear?	
Digitalis (toxic doses)	
Carcinomatosis	

<sup>1</sup> Three to four days after a major operation.

<sup>2</sup> In any part of the vascular tree

<sup>3</sup> Walker, J. and Rhoads, J. E.: Surgery 15:859, (May) 1944. Unless otherwise stated, the observations are our own.

Our present practice is to determine the tolerance to heparin of the following group of surgical patients: (1) in those who give a history of previous thromboses; (2) in those who have developed a thrombosis and are to be placed on anticoagulants; (3) in patients with Buerger's disease or polycythemia about to undergo an operation; (4) in fibrillating digitalized patients who have thrown emboli and are in danger of future showers. The flat tolerance curve indicates caution and the prophylactic use of anticoagulants. Another small but definite group show a drug allergy to heparin with an intense prolongation of the clotting time. Such patients cannot be given heparin intravenously.

If the flat heparin curve could pick out the group of patients who are in danger of postoperative thrombosis, they would be the ones requiring prophylactic anticoagulants. It will probably take one thousand patients before such a statement could be made with assurance.

### The Early Diagnosis of Venous Thrombosis

It has been suggested that nurses or interns measure the circumference of the calves of bedridden patients daily. This seems hardly possible during the present shortage of help. Besides it presupposes that edema is the first symptom of muscle-vein thrombosis. Cramping of the calves, pain on dorsiflexion of the foot often precede edema. Objectively, a slight increase in skin temperature, increased pulses, increased oscillations, together with faint cyanosis and distention of dorsal veins when the foot is hung over the side of the bed may be present. The calf is tense not only because of accumulation of fluid but because there is protective muscle spasm of the calf muscles over the thrombosed veins not unlike a rectus rigidity over an inflamed viscous. It is my impression that tabulation of early signs and symptoms of lower leg thrombosis in the order of their frequency is not going to be as helpful as a steady awareness of the possibility of such complication and determined action following its recognition.

The use of phlebograms has been vastly overdone.

The visualized veins give an interesting pattern but the interpretation of the films is difficult. Our group has made use of this method for many years, only employing it when no other method seemed available for diagnosis. Phlebograms are often misleading and their routine use is not indicated.

The localization of thrombi is most important when a pulmonary embolus occurred as the first sign of thrombosis and when it would be desirable to know the source of the embolus. Such a situation is present in approximately 40 per cent of pulmonary emboli. If the lower legs give no indication of venous obstruction or protective muscular spasm, if the thigh and groin are not tender and swollen, one should not forget the pelvis and the right side of the heart as a possible location of the thrombus. In spite of all the recent interest in the ascending thromboses of the lower leg, the pelvis is a potent source of small, slightly infected thrombi around the uterus, bladder, prostate and rectum; when such a thrombus grows into the common iliac vein a large pulmonary embolus may occur with a secondary iliac thrombosis. Also the right heart is frequently the source of a pulmonary embolus in rheumatic fibrillation or following coronary occlusion.

#### **The Early Treatment of Thrombosis in the Lower Extremities**

The three methods of treatment, namely, sympathetic block, anticoagulants, and division of the vein proximal to the thrombus do not necessarily exclude or contraindicate each other's use. Each method has its place and the extreme advocates of each will gradually no doubt recognize their limitations.

*Sympathetic Block.*—When the thrombosed extremity is cold, cyanotic, and the pulses are weaker or absent because of a widespread vasospasm, the block gives dramatic help. The diffuse pain is relieved, the edema recedes, the leg becomes warm. A phlebogram shows much more extensive and wider venous channels after a block, indicating the release of *venospasm*. However, this syndrome is seen only when the iliofemoral segment is occluded, when there is a periphlebitis or lymphangitis around the thrombosed vein which maintains the vascular spasm. Such a periphlebitic exudate may organize into a heavy fibrous scar in the common vascular sheath of the femoral vessels and may maintain a painful edema for many months and years. In such patients repeated sympathetic blocks or stripping of the periphlebitic vein, which may have canalized, is of great benefit.

But it is not to be supposed that the usual lower-leg thrombosis, in which the leg is tense, but warm and well pulsating, would benefit from a sympathetic block. A bland, non-irritating thrombus which is often embolic does not receive any benefit from such a measure. Nor is there any reason to believe that a sympathetic block would protect the patient from an embolus; it may release the venospasm proximal to the clot.

*Anticoagulants.*—With the exception of localized, segmental thrombi in infected varicose veins, thrombosis is a systemic disturbance of the entire clotting mechanism. A surgeon would hesitate to operate on diabetics without the required amount of insulin; yet he is often unaware of the benefit of anticoagulants. Heparin can now be administered in intermittent intravenous doses, the average dose being 5 cubic centimeters every three to four hours. This type of administration need only be continued for two days, after which the effect of dicoumarol becomes manifest. This drug is, started simultaneously with the first dose of heparin. Dicoumarol, as is generally known, cannot be administered unless daily determinations of prothrombin levels are available. Our patients' prothrombin levels are kept between 50 and 30 per cent of normal until they are completely mobilized. This takes the attention of a trained resident staff and is more conveniently done on a medical than a surgical service. Emboli or hemorrhages may occur during the administration of anticoagulants, but they are overwhelmingly due to faulty administration of the drug.

If the subcutaneous administration of heparin becomes available and will prove practical it will require a few capillary coagulation times for its control and will eliminate the "ticklish" administration of dicoumarol. However, to date, this is our most potent and reliable drug for continuous use.

When a patient who has recurrent attacks of thromboembolic phenomena leaves the hospital he can take restricted amounts of dicoumarol over many months. Such patients are taught to run their own coagulation times and have prothrombin levels preferably once a week. The average dose of this prophylactic administration which keeps the level around 80 per cent of normal is 200 milligrams twice a week.

*Proximal Division of the Vein.*—We have recognized a clear indication for this procedure under the following conditions:

1. When a leg is amputated at the level of the knee or above it, the vein is tied at the groin for the prevention of embolism. There has been so much difficulty in the elderly arteriosclerotic and diabetic patients with infarcts and emboli that this excellent suggestion of Veal's has been routinely followed. The patient is mobilized early and is not given anticoagulants.
2. When a patient has thrown a pulmonary embolus and the site of the thrombus is clearly below the knee in the deep veins.
3. When deep venous thrombosis of the lower leg is diagnosed and the thigh is not swollen nor is the course of the femoral vein tender on pressure.

With such indications there has been no subsequent embolus, no residual impairment of any degree. However, since subsequent recurrent thrombosis may occur in the collaterals of an extremity whose main vein is tied, the patient's "thrombophilia," whether on an infectious or allergic basis, needs close attention.

Ligation of the common femoral or common iliac vein in patients exhibiting a typical milkleg or a periphle-

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bis of the iliac vein has not been done routinely. Anticoagulants and x-ray therapy are useful in this series. The danger of embolism is not greater than when ligation is done at a high level.

Ligation of the vena cava has also not been done in any of my cases, although a bilateral common iliac involvement with a preceding massive embolus might tempt one to do so.

The question might be asked: Since one is so conservative in the indications of vein ligation, why ligate the femoral vein at all. A prophylactic or therapeutic division of the femoral vein is such a simple procedure, done under local anesthesia, that it compares favorably with anticoagulant therapy; it also prevents the development of a persistent thrombophlebitic edema by limiting the thrombus to a level below the ligature. With the advent of simpler anticoagulant methods even this form of ligation may disappear.

The high divisions require general or spinal anesthesia; they are operations which, *per se*, carry a percentage of ligature thrombosis in patients who have already demonstrated their tendency to thrombus formation. Without anticoagulants such high ligations or divisions may well produce instead of prevent emboli.

High division of the iliac segment in the presence of chronic deep thrombophlebitic edema is especially dangerous; such patients may thrombose their patent collaterals as most forcibly demonstrated by a recent report of Dennis from the University of Minnesota. It must be remembered that occlusion of a vein above the profunda femoris invariably slows venous return. In fact I have reported case histories to show that femoral vein ligation in the presence of well-developed collaterals may predispose to later attacks of thrombosis. While the circulation time from ankle to tongue is not appreciably affected by division of the superficial femoral vein, it is roughly trebled after division of the common femoral or external iliac vein.

It is questionable that a preveinous inflammatory reaction around the femoral warrants a ligature above the visible level of periphlebitis, as recently expressed by Fine. The perivenous lymphangitis often extends high into the retroperitoneal space; it does not always signify thrombosis. One encounters these reactions in the late thrombophlebitic edemas, when attempting a sympathectomy. They are obviously unaffected by dividing the vein.

### The Late Sequelae of Deep Venous Thrombosis

**Recurrent Emboli.**—Patients are encountered who exhibit pulmonary emboli many months or years after the initial attack. One patient, whose thrombosis originated following a hysterectomy, had five attacks of pulmonary infarction in the next eight years. The attacks were preceded each time by a recognizable activation of a thrombosis in the left calf. Such a patient should certainly have a division of the femoral vein, but even this will not prevent recurrent attacks of thrombosis. In another case such attacks were aborted by a short course of therapy with sulfadiazine. However, all possible foci of infection, especially in teeth and tonsils,

should be eradicated, since clinical experience indicates that recurrent attacks are activated from such a source. That sensitization phenomena may play a part is to be investigated.

Frequently massive plaques of thrombophlebitic induration appear along the course of a phlebitic cord, which may spread in all directions and cause a great deal of pain and disability. After a short period of immobilization and hot foments, such patients receive a glycerin-gelatin cast which allows them to become ambulatory. When the acute process has subsided, iontophoresis with a 0.5 per cent mecholyl solution may soften the induration. Ulcerations which occur in the center of such phlebitic indurations may heal slowly but recur year after year. Excision of the induration, followed by a split-thickness skin graft has been very satisfactory. The graft must be protected for several months by gelatin-glycerin casts and later by elastic support. Should a renewed attack of edema occur, the graft may break down again.

Such late thrombophlebitic indurations constitute a real handicap for the patient; their prevention lies in the early treatment of deep venous thrombosis as outlined above. Sympathetic block, early low vein ligation, and anticoagulant therapy all militate against the development of permanent edema. Heparin in the early edemas not only inhibits the propagation of thrombi, but prevents the extensive clotting of plasma which clogs the lymphatics, sets up a connective-tissue reaction, and results in the hard, brawny indurations.

Another group of patients suffer less from persistent edema than from extensive collaterals which are unsightly, which frequently become thrombosed, and for which often ligations and injections are being done. The pattern of such collateral varices arising from an old deep venous occlusion is so characteristic that frequently a simple inspection will reveal their origin. Thus the perimalleolar varices coursing transversely are the result of a thrombosis of the posterior tibial vein; a large tense short saphenous, with multiple incompetent perforators in the posterior surface of the calf may indicate a popliteal thrombus; a tortuous prepatellar vein draining the anterior surface of the calf into the superficial femoral vein denotes a block of the anterior tibial vein; a lateral vein of the thigh connecting with a tense gluteal vein drains into the hypogastric system, shortcircuiting the common femoral vein. The lateral lumbar, or the suprapubic veins, indicate external iliac obstruction.

The question of the potency of the originally obstructed deep venous segment now presents itself. I have previously emphasized the syndrome of deep venous insufficiency following recanalization, and a group at Ann Arbor have felt that ligation of such an insufficient segment might be beneficial. From what has been said previously it appears that such a procedure would only increase the difficulty of venous return and would throw an added burden on the existing collateral circulation. It would seem more promising to ligate some of the collaterals if it can be demonstrated that the deep system is again adequate. This does not always mean

recanalization, since collaterals also develop in the deep channels. The crux of the problem is, then, whether or not the superficial collaterals have become superfluous and can be tied with impunity. To determine this, the Perthes test still remains invaluable; also phlebograms can here be applied with more safety than in the presence of acute thrombosis. If the patency of the deep venous system can be ascertained by a Perthes test or by phlebograms and there is evidence of marked reflux of blood due to valvular incompetence of the superficial system, ligations at the saphenofemoral junction or at the site of incompetent perforators can be undertaken. This may result in marked improvement of venous return. Injections, however, should never be undertaken simultaneously with the ligation, since a sudden massive obliteration of the collateral bed increases the edema or may activate a latent deep phlebitis. Injections can be slowly given over a period of time aided by continuous elastic support. Such patients require carefully individualized treatment and should not receive the routine high saphenous division followed by retrograde injection with a catheter.

Another group of patients complain of recurrent attacks of pain, of sciatic or femoral distribution with or without accompanying edema. Such extremities show a hyperesthesia and glossiness of the skin, vasomotor instability, and an osteoporosis, all of which suggest a state resembling or duplicating the causalgic state. When the ilio-femoral segment of such a patient is exposed, a hard, cement-like periphlebitic exudate is encountered. A remarkable improvement in the case of two patients was observed in 1937, in whom a venous stripping was done. Today one is more inclined to perform repeated sympathetic blocks which promptly relieve the pain and are also useful as a diagnostic test that autonomic reflex phenomena are at play.

Another type of postphlebitic neuralgia mostly of sciatic distribution is seen in thromboses of the hypogastric vein and its tributaries. Such painful sciaticas may be due to a thrombosis of the sciatic vein (and also the artery) which can be readily seen when patients of this type have to undergo amputation.

A not too infrequent cause of pain in phlebitic extremities is truly psychogenic. The fear of recurrent thromboembolism produces a true thrombophobia which is often aggravated after a visit to a doctor. It is amazing how simple reassurance and more adequate elastic support will help this type of patient; that this thrombophobia is usually superimposed on a truly organic lesion is obvious.

The last but most important complication of deep venous thromboses is the embolic phenomena to the heart and lungs. This has been discussed many times before and only the routine emergency treatment is given here, which has been impressively lifesaving on our service. The table is placed conspicuously on every surgical floor.

### Summary

Any effort to decrease the incidence of thromboembolic phenomena must be directed toward measures of prevention, methods of early diagnosis which must

TABLE II. PULMONARY EMBOLISM

#### Recognition

Sudden onset of shock with rapid, weak pulse, restlessness, difficult, rapid breathing, sweating and pallor, pain in chest, fainting, collapse or unconsciousness. Apt to be in a patient who has phlebitis or is convalescing from an operation or delivery or is a known cardiac.

#### Emergency Treatment

##### By Nurse

1. Place in semi-sitting position.
2. Start oxygen by catheter or mask immediately. Tanks are on each floor.
3. Give 1/75 grain atropine sulfate, hypodermically, immediately.
4. Call intern.

##### By Intern

1. Give a second dose of 1/60 to 1/75 grain atropine sulfate intravenously (if previous injection of atropine has not caused flushing of face and dilation of pupil).
2. In any case give 1/2 grain papaverine hydrochloride intravenously.
3. Repeat atropine and papaverine three or four times a day.
4. Order portable chest film and electrocardiogram.

##### Note:

Morphine, adrenalin or digitalis may aggravate the condition. Above treatment is useful even if patient is suffering from some other condition such as coronary occlusion or a cerebral vascular accident.

be simple and harmless, and finally, a properly timed treatment. Sympathetic block, anticoagulants, and division of veins all have their proper indications. Many disabling late sequelae can be averted by early, intensive therapy. Pulmonary embolism must also receive early management, directed against oxygen-want and autonomic reflex phenomena.

#### References

1. de Takats, Geza: The surgical treatment of thromboembolism and its sequelae. Bull. New York Acad. Med., 20:623, 1944.
2. de Takats, Geza, and Fowler, E. F.: The problem of thromboembolism. Surgery, 17:153, 1945.

#### Discussion

Dr. H. O. McPHEETERS: After hearing such a masterly discussion of this subject as Doctor de Takats has given us, my getting up here makes me feel like the student trying to criticize the professor, and I realize how incompetent I am to do it. I have never heard a more complete discussion on this subject. After my recent trip around the country and seeing men who are so radical in handling some of these things, I am happy to hear that Doctor de Takats is still conservative relative to the immediate and radical high femoral ligation.

The importance of the subject of thrombo-embolism and thrombophlebitis is clearly stated in an article by J. H. Gibbon, Jr., in the *Pennsylvania Medical Journal*, 42:877, (May) 1939. The presentation was on "Pulmonary Embolism: Review of Recent Contributions." In part he says:

"In a statistical consideration of this subject Gibbon was able to express the incidence of fatal pulmonary embolism as follows: Of every thousand patients admitted to the surgical wards, one will die of pulmonary embolism. Other investigators have found that of every seventeen to twenty patients with clinical manifestations of thrombophlebitis one will die of pulmonary embolism and one in every twelve who had a previous nonfatal embolism will die of a subsequent embolus. These figures demonstrate forcefully that the incidence and consequence of thrombo-embolic phenomena are of sufficient extent to deserve serious consideration."

To further emphasize the importance of pulmonary embolism I refer you to the article by O. S. Culp, in

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the *Bulletin of the Johns Hopkins Hospital*, 67:1, 1940. He reports a series of eight, 163 urological operations in which eighty-eight pulmonary emboli developed. Thirty-two of these were fatal and so proved at autopsy. Of these fatal cases 20 per cent had shown pre-operative evidence of cardiac decompensation; 43.7 per cent were underweight; 62 per cent were in patients over sixty years of age; while only 41 per cent of all the patients in the series were over sixty years of age.

Hampton and Casselman report 370 cases of fatal pulmonary emboli, as proven by autopsy, with 60 per cent in medical cases and 40 per cent in surgical cases.

Doctor de Takats brought out the point that the real danger in these conditions is before the clear signs appear. That is, before you get the definite signs of the presence of the phlebitis. In the early stage the clot lies loose, while after the phlebitis has developed it has become fixed in large measure. Of course, it may propagate as a loose clot up the vein proximally. The time to make your diagnosis and to do the femoral ligation is with the early signs while it is thought we have a phlebothrombosis and not the phlebitis.

I believe there is a phlebothrombosis of the pelvic and hypogastric veins far more often than we think. At times this is the cause of sciatic neuritis pains. Local heat, hot sitz baths and hot douches help much. This is a common source of the obscure emboli we often see. Precordial pain in a convalescent patient is often diagnosed as due to a coronary attack, or the onset of atypical pneumonia, when in reality the pain is due to a pulmonary embolus.

The reflex spasm associated with and due to the onset of a phlebitis is often so severe that due to the associated arteriospasm we may actually have a thrombosis develop in a vessel and get a complete closure of same with a resultant gangrene.

Thrombophlebitic edema is supposed to be rich in protein. It is easily mobilized at first, but produces much fibrosis later, and this is permanent.

The use of phlebography in the diagnostic phase of this work and in helping to decide just when to ligate and when not to has many advocates. Personally, I use it but little. I prefer the clinical findings and examinations. The interpretation of the films is difficult and questionable; certainly not as clear and definite as some would lead you to believe.

I use the dicumerol in every case, but the prothrombin time must be closely watched. I prefer to speak of it in *per cent of normal*, and try to hold the level at about 25 per cent to 30 per cent.

I feel sure that the wave of enthusiasm for the immediate high femoral ligation for a mild phlebitis or rather a suspected phlebothrombosis in the calf has gone far too far. It will recede after a year or so, and then we will stand on solid ground. The disadvantages and objections to its too frequent use have not had their proper appreciation. It will come.

The greatest single advance that has been made in the treatment of phlebitis is the lumbar sympathetic block with novocain. When done early the results are very striking. Fine results are often even weeks after the onset. Doctor de Takats has emphasized this point. This should be practiced on the fresh cadaver at autopsy. It is simple and easily done if certain rules are followed.

DR. CYRUS HANSEN: I had hoped that Doctor de Takats would have elaborated a bit more about his experience with x-ray therapy in these conditions, as I know he has been associated with a considerable amount of work in this direction.

As I see it, x-ray is an adjunct to the other types of treatment and the benefit is chiefly the relief from pain and speeding of resolution of the inflammatory

reaction associated with the phlebitis. I have seen a few patients with the migratory type of phlebitis and they seem to derive a great deal of benefit from small doses of x-ray in the acute stage.

With Doctor McPheeters we have seen a good many patients where the x-ray has been of considerable value as a pre-operative treatment of the low grade cellulitis frequently seen in the extremities. Here the treatment is directed to the infection and Doctor McPheeters says the results have been very gratifying.

The dosage used must be small, 75 volts to 150 volts at five to seven-day intervals, choosing the voltage and filtration to adequately penetrate all of the involved area.

DR. J. J. BOEHRER: I should like to ask Doctor de Takats two questions:

1. What information does his heparin tolerance test give him, as to the range of dosage of heparin which may be required?

2. It has been assumed that dicoumarol is equally efficacious with heparin in the treatment of these conditions, even though its mechanism of action is different and its effect upon the coagulation time is slight in therapeutic ranges of the drug. Would not heparin be preferable to dicoumarol were it not for its expense and inconvenience of administration?

Finally, there is a good deal of confusion regarding seconds and percentages in prothrombin time. Many men have the idea that there is a linear relationship between time and percentage in prothrombin time. In other words, they assume that if the prothrombin time in a patient is twice that of the control, that the patient's prothrombin time is 50 per cent of normal. This is not true. The proper way for prothrombin to be determined in percentage is for each hospital to make up its own prothrombin percentage curve, diluting plasma with normal saline to 90, 80, 70 per cent and so on, and measuring the prothrombin time for each of these percentage levels. This must be done for each new batch of thromboplastin.

DR. J. M. HAYES: I hesitate to discuss this very scholarly paper of Doctor de Takats. He has given an excellent scientific review of this subject. I did want an excuse to get back on this old familiar platform once more.

I have a slide made many years ago which shows the simplest approach to the splanchnic trunk from the posterior area.

This slide, as you see, was taken from a sketch in Labot's book. Labot came from Pouchet's Clinic in Paris. He was brought to the Mayo Clinic to teach us how to do block anesthesia. I was fortunate enough to be working with him when he started to write his book on block anesthesia.

For a time we used this posterior splanchnic block several times a day to give us anesthesia in the upper abdomen for gall bladder, common duct, and other upper abdominal operations. We made no attempt to get the ganglia, but injected the main splanchnic trunk. One only has to try a few injections on the cadaver or living body to discover that it is much more simple to inject the splanchnic trunk than the individual ganglia. There is practically no danger to this procedure if one observes two simple rules. First, avoid injecting into a blood vessel. Next, be sure to inject under the pre-vertebral fascia. If one uses a small calibre needle there is no great harm entering a blood vessel provided no solution is injected.

I had done many of these injections before I realized this had so marked an effect on the vascular system of the leg.

Ochsner and his associates first called attention to this in 1939. Soon after this I had a patient come

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to my office with a marked phlebitis and a varicose ulcer about 1.5 inches in diameter. He had diabetes, hypertension and he weighed about 240 pounds. He had so much pain and discomfort he said he would have to quit his work unless I could do something for him. I did a posterior splanchnic injection on him in the office. While I was injecting him, he said the pain in the leg was letting up. I injected only about 2 c.c. of 1 per cent novocain. After waiting in the office an hour he went back to work, and continued to work without discomfort. About two weeks later the leg had returned to about normal size, the ulcer was rapidly healing and the patient was feeling fine. He had no further treatment for this except a few dressings on the ulcer. That was about five years ago. He was in the office recently to show me that his leg was practically normal and he has had no trouble with it since the injection.

This very unusual case has made me enthusiastic over the results of this treatment. I have injected many of them in the office since with quite uniformly good results.

In regard to tying off the vein, either femoral or iliac, above the thrombus in a thrombophlebitis we should be conservative. Not long ago I was called to tie off a vein in a patient who already had a pulmonary embolus. The patient appeared to be a bad risk. I wasn't sure but what I might break off the fatal embolus in doing this operation.

Kretschmer, who had come from Linser's Clinic in Germany some years ago, showed me their method of binding these legs with acute thrombophlebitis. He was the same man who gave us the inspiration to start injecting veins many years ago.

An elastic bandage is started on the foot at the base of the toes and wound rather tight to the knee. Just below the knee the cuff is made especially tight. Another bandage begins here and extends well up to the groin. Again a tight cuff is made just below the groin. The two most common sites of thrombus are in the calf of the leg and just below the groin. The cuff at each site is supposed to prevent emboli from escaping into the vein above. The elastic bandage also prevents swelling of the foot and leg.

I have used this on every acute phlebitis I have seen since and fortunately have not seen emboli escape after the bandage was put on, even where one or more emboli had escaped before application of the bandage.

If the patient's condition warranted it otherwise, he was allowed to get out of bed as soon as the bandages were applied.

We now apply the elastic bandages and do the posterior splanchnic in all these cases, as soon as the thrombophlebitis is recognized. The results are often very striking.

DR. GEZA DE TAKATS: I am very grateful for the discussion, gentlemen. I would like to thank Doctor McPheeers for his kind words. He brought out a few points I neglected to mention, and one is the syndrome of pelvic phlebitis. In two patients who were sclerotic, one could actually see a thrombosis of the sciatic vein at amputation, which of course, is a branch of the hypogastric, and which might well be the cause of this severe sciatica which some of the patients have. I have looked for this, and when amputating a leg, we look for the sciatic artery and we always note the state of the sciatic vein. It is surprising how often they are thrombosed. Phlebograms must be used with reserve and only if other methods of diagnosis fail.

Doctor Boehrer mentioned the confusion about the prothrombin time as expressed in seconds and in percentage of normal. When we first started out, prothrombin level was expressed in seconds. He is absolutely right that it should be calculated in percentage of nor-

mal and every hospital has to make up its own curve. It is also true that every time when the regular technician is not doing it, there is always a questionable result. There is nothing worse than to have to rely on faulty prothrombin time. The same technician should be used. This is the present difficulty of prothrombin levels generally used; the errors are too great.

Doctor McPheeers asked about penicillin and sulfa drugs in thrombophlebitis. Our results have been very discouraging. Patients who have bacterial endocarditis and are getting 240,000 units of penicillin every day with continuous heparin administration develop emboli and phlebitis under this therapy. It is interesting to note that penicillin increases heparin response, that is, the patient becomes more sensitive to heparin. Doctor Quick brought out the importance of the X factor in the blood. He pointed out that heparin is not an anti-coagulant until it combines with albumin, and some drugs, digitalis perhaps, interfere with the heparin-albumin complex.

I am happy Doctor Hansen brought up x-ray therapy. We have used x-ray therapy in thrombophlebitis for many years. Our feeling is that if the patient has a large exudate around the vein, this will respond to x-ray. The question arises whether or not a thrombus would organize more rapidly under x-ray treatment. There is no question that edema goes down and pain is relieved. As Doctor Hansen said, use small doses. I have seen flare-ups and attacks of fever from as little as 125 roentgen units; 75 to 100 units with deep filter, repeated once a week, is our method of choice.

I am delighted to hear that Doctor Hayes is back in town. He brought up the method of splanchnic nerve injection. In 1925 I presented a collective review on the posterior approach to the splanchnic nerve. The lumbar method is a little simpler for me. I am afraid of getting into the vena cava. Outside of Doctor Hayes and a few other men, most men would not dare do splanchnic block in the office. We are forced to do diagnostic block in arterial disease on ambulatory patients, but we do them in the hospital and keep the patients there about one hour until their skin-temperature or walking ability improves. In general, it would be hazardous to regard this as office practice.

I haven't had time to discuss symptoms of early pulmonary embolism which often looks like coronary occlusion. Cardiologists feel that pulmonary types of cardiograms give you a typical curve which looks like a posterior wall infarct. Infarcts simulate pleurisy and pneumonia and myocardial damage. The elevation of the diaphragm in lower lobe infarcts needs mention. Roentgenologists can only describe a shadow, and you must interpret it in the light of clinical findings.

If subcutaneous heparin becomes available which is heparin dissolved in Pitkin's solution, you can give 300 mg. of heparin every second day and it will simply require coagulation time for control.

In regard to the use of the heparin curve: after the heparin curve has been established, we begin with a 50 mg. dose intravenously and note the time it takes for the coagulation time to return to normal. It may take two, three, or four hours, and after the patient has shown his ability to handle the 50 mg. of heparin, the same dose is repeated. It will not produce a continuous elevation of coagulation time, nor does the drip method do it. Heparin also inhibits adhesion of platelets which is an important action and we have no simple clinical method to determine it. In spite of the fact that we have no steady elevation of coagulation time, 5 c.c. of heparin every three hours has been very satisfactory and easier for the patient than with the continuous drip.

The meeting adjourned.

ERNEST R. ANDERSON, M.D.,  
Recorder

# Minnesota State Medical Association

## House of Delegates

Saint Paul Session — May 19-20, 1945

Complying with a decision passed by the Council at a meeting held December 9, 1944, only a summary of the 1945 session of the House of Delegates appears for publication. Mimeographed copies of the complete transcript of the proceedings, which have just been received from the court reporter, will be sent to each of the delegates at an early date.

\* \* \*

### HOUSE OF DELEGATES

First Meeting, Saturday, May 19, 1945

Ramsey County Medical Society Auditorium

Saint Paul, Minnesota

The Ninety-second Annual Meeting of the Minnesota State Medical Association House of Delegates convened in the Ramsey County Medical Society Auditorium, Lowry Medical Arts Building, Saint Paul, Minnesota, Saturday, May 19, 1945, at 2:20 p.m. with Dr. W. W. Will of Bertha, Minnesota, Speaker of the House of Delegates, presiding.

Speaker Will called the meeting to order and called for a preliminary report from the Credentials Committee, Dr. A. J. Lewis of Henning, Minnesota, Chairman. Dr. Lewis reported that forty-three delegates were present constituting a quorum, and it was moved, seconded and carried that the report be accepted. It was also moved, seconded, and carried that the minutes of the previous meeting be accepted as printed without further reading, after which the Speaker called for the report of the chairman of the Council, Dr. W. L. Burnap of Fergus Falls.

A written report was read by Dr. Burnap following which he offered two resolutions commending the authors of the Enabling Act and other members in both houses of the Legislature for their splendid efforts in its behalf that resulted in its passage by an overwhelming majority. These resolutions were referred by the Chair to the Resolutions Committee.

Speaker Will then called for a report from the Committee on Finance, Dr. L. A. Buie of Rochester, chairman. This was followed by a report by Dr. Stephen H. Baxter, of Minneapolis, chairman of a special committee appointed by the Council to study the question of extending paid-up memberships to association members of long standing who have been in active practice over a long period of years. Dr. Baxter reported that a proposal of his committee, still in its preliminary stage, had been presented to the Council that morning but that no action had been taken.

Speaker Will then called for a report from the Reference Committee on Medical Education Reports, Dr. H. C. Habein of Rochester, chairman. Dr. Habein

stated that the following reports had been considered by his committee:

Cancer—M. W. Alberts, M.D., of St. Paul, Chairman  
Conservation of Hearing—Horace Newhart, M.D., of Minneapolis, Chairman  
First Aid and Red Cross—J. S. Lundy, M.D., of Rochester, Chairman  
Heart—F. J. Hirschboeck, M.D., of Duluth, Chairman  
Hospitals and Medical Education—H. S. Diehl, M.D., of Minneapolis, Chairman  
Public Health Nursing—Mario Fischer, M.D., of Duluth, Chairman  
Syphilis and Social Diseases—P. A. O'Leary, M.D., of Rochester, Chairman  
Tuberculosis—J. A. Myers, M.D., of Minneapolis, Chairman

Dr. Habein moved for the acceptance of these reports, the motion being duly seconded and carried.

At the request of Speaker Will, the report of the Reference Committee on Miscellaneous Scientific Reports was read by Dr. R. W. Morse, Chairman, reporting on the following committees:

Child Health—R. L. J. Kennedy, M.D., of Rochester, Chairman  
Diabetes—J. R. Meade, M.D., of St. Paul, Chairman  
Fractures—V. P. Hauser, M.D., of St. Paul, Chairman  
Historical—M. C. Piper, M.D., of Rochester, Chairman  
Industrial Health—A. E. Wilcox, M.D., of Minneapolis, Chairman  
Interprofessional Relations—W. P. Gardner, M.D., of St. Paul, Chairman  
Maternal Health—R. J. Moe, M.D., of Duluth, Chairman  
Medical Testimony—E. M. Hammes, M.D., of St. Paul, Chairman  
Military Affairs—J. J. Catlin, M.D., of Buffalo, Chairman  
Nervous and Mental Diseases—J. C. McKinley, M.D., of Minneapolis, Chairman  
Ophthalmology—T. R. Fritzsche, M.D., of New Ulm, Chairman  
Public Health Education—S. H. Baxter, M.D., of Minneapolis, Chairman  
Radio—R. M. Burns, M.D., of St. Paul, Chairman

Further comments on the report of the Committee on Child Health were interposed at this point by Dr. R. L. J. Kennedy, on invitation from the Chair, followed by comments from Dr. Victor O. Wilson relative to the Emergency Maternity and Infant Care program in the state.

Upon motion made by Dr. Morse, the Miscellaneous Scientific Reports were duly accepted.

Speaker Will then called for a report from the Reference Committee on Officers and Council Reports, Dr. G. I. Badeaux of Brainerd, chairman. Dr. Badeaux reported that his committee had considered the following reports:

## PROCEEDINGS—HOUSE OF DELEGATES

Secretary and Executive Secretary—B. B. Souster, M.D., of St. Paul; R. R. Rosell of Minneapolis  
Treasurer—W. H. Condit, M.D., of Minneapolis  
Chairman of the Council—W. L. Burnap, M.D., of Fergus Falls

Councilors:  
First District—L. A. Buie, M.D., of Rochester  
Second District—L. L. Sogge, M.D., of Windom  
Third District—C. M. Johnson, M.D., of Dawson  
Fourth District—A. E. Solmer, M.D., of Mankato  
Fifth District—E. M. Hammes, M.D., of St. Paul  
Sixth District—A. E. Cardle, M.D., of Minneapolis  
Seventh District—E. J. Simons, M.D., of Swanville  
Eighth District—W. L. Burnap, M.D., of Fergus Falls  
Ninth District—F. J. Elias, M.D., of Duluth

After acceptance of these reports, upon motion made by Dr. Badeaux, Speaker Will called for a report from the Reference Committee on Medical Economics Reports, Dr. Clarence Jacobson of Chisholm, chairman, who reported on the following committee reports:

Medical Economics—George Earl, M.D., of St. Paul, Chairman  
Medical Ethics—R. D. Mussey, M.D., of Rochester, Chairman  
Medical Advisory—W. H. Hengstler, M.D., of St. Paul, Chairman  
Low Income and Indigent Problems—W. A. Coventry, M.D., of Duluth, Chairman  
Sickness Insurance—A. W. Adson, M.D., of Rochester, Chairman  
Industrial and Contract Practice—R. F. McGandy, M.D., of Minneapolis, Chairman  
Editing and Publishing—E. M. Hammes, M.D., of St. Paul, Chairman  
State Health Relations—T. H. Sweetser, M.D., of Minneapolis, Chairman  
University Relations—E. M. Jones, M.D., of St. Paul, Chairman  
Public Policy—L. L. Sogge, M.D., of Windom, Chairman

Supplementing the report submitted by the Editing and Publishing Committee, Dr. Hammes asked that the delegates urge Association members to submit scientific papers and interesting case reports for publication to Dr. C. B. Drake, Editor of MINNESOTA MEDICINE, to relieve the acute shortage of scientific material resulting from the cancellation of the Annual Meeting.

The Chair called for supplementary remarks from Dr. A. W. Adson, Chairman of the Committee on Sickness Insurance, in view of the significance of its recommendations relative to procedures to be taken by the House of Delegates following passage of the Enabling Act by the State Legislature. A lengthy discussion followed and it was voted to consider each of the recommendations separately.

The question of setting up a temporary Board of Directors to formulate plans for organizing a voluntary non-profit medical service corporation, in accordance with stipulations in the Enabling Act, was disposed of by voting that a caucus of the regular elected delegates to the House of Delegates from each councilor district, provided that no local caucus had been held previously in the respective councilor district, should select the two members to serve from their respective districts as members of a temporary Board of Directors, and that these

directors, so elected, in turn, should select three directors at large, representing the specialties.

By a vote of the delegates, this temporary Board of Directors was empowered to take the preliminary steps necessary to the formulation of such a corporation, and it was also voted that the caucuses should be held sometime prior to the second session of the House of Delegates, and the first meeting of the Board of Directors should be held sometime prior to the adjournment of the final session of the House of Delegates.

Upon recommendation of the Chairman of this Committee, it was voted to change the name of the Committee on Sickness Insurance to the Committee on Medical Service.

Dr. Jacobson moved for the acceptance of the Medical Economics Reports, as amended, the motion being duly seconded and carried.

Whereupon the Saturday afternoon session was regularly adjourned, to be reconvened at 10:00 a.m., Sunday morning.

### Second Meeting, Sunday, May 20, 1945 Ramsey County Medical Society Auditorium Saint Paul, Minnesota

The second session of the House of Delegates was convened Sunday, May 20, 1945, at 10:00 a.m., Speaker W. W. Will presiding. Dr. A. J. Lewis, Chairman of the Credentials Committee, reported that a quorum was present.

Speaker Will called for a report from each of the Councilor Districts on the caucuses held since Saturday's session for the purpose of selecting members on the temporary Board of Directors for the formulation of a voluntary non-profit medical service corporation. The following names were received and duly elected by the House of Delegates:

- 1st District—H. Z. Giffin, M.D., of Rochester  
C. B. McKaig, M.D., of Pine Island
- 2nd District—W. C. Chambers, M.D., of Blue Earth  
C. L. Sherman, M.D., of Luverne
- 3rd District—B. J. Branton, M.D., of Willmar  
W. W. Yaeger, M.D., of Marshall
- 4th District—R. N. Andrews, M.D., of Mankato  
B. J. Gallagher, M.D., of Waseca
- 5th District—V. P. Hauser, M.D., of St. Paul  
W. R. Humphrey, M.D., of Stillwater
- 6th District—R. R. Crammer, M.D., of Minneapolis  
M. M. Weaver, M.D., of Minneapolis
- 7th District—A. M. Watson, M.D., of Royalton  
A. H. Zachman, M.D., of Melrose
- 8th District—W. L. Burnap, M.D., of Fergus Falls  
J. F. Norman, M.D., of Crookston
- 9th District—B. S. Adams, M.D., of Hibbing  
J. R. Manley, M.D., of Duluth

Following a suggestion from the Chair, Dr. Adson, as Chairman of the Committee on Medical Service (formerly Committee on Sickness Insurance) called a meeting of the newly elected directors for 1:45 that afternoon in the Ramsey County Medical Society Auditorium for the purpose of holding a preliminary meeting to organize.

Dr. Edward L. Tuohy of Duluth, President of the Minnesota State Medical Association, then addressed the delegates. He outlined the need for decisive, coherent

## PROCEEDINGS—HOUSE OF DELEGATES

action in the next few months in the field of medical legislation and public relations and presented a proposal for a broad-gauge radio program embracing 17 states, including Minnesota, designed to dramatize the story of private medicine to the public. This idea, Dr. Tuohy said, originated with the Michigan State Medical Society following the excellent reception it had experienced with a similar program that had been developed locally.

Dr. Julian F. Dubois of Sauk Center then gave a report on the activities of the State Board of Medical Examiners, following which a request was made that he furnish a report for publication in *MINNESOTA MEDICINE* at a later date.

Dr. W. F. Braasch of Rochester, Chairman of the Minnesota Committee of the Procurement and Assignment Service, reported on the activities of his committee, following which, as a member of the Board of Trustees of the American Medical Association, he reported on the far-reaching program of the American Medical Association, particularly with reference to post-war planning.

Speaker Will then called for a report from Dr. E. J. Simons of Swanville, Chief of the Medical Unit of the Division of Social Welfare, on the work of his unit, after which the delegates heard a report from Dr. A. J. Chesley of St. Paul, Secretary of the Minnesota State Board of Health.

There being no further business, the meeting was adjourned at 12:20 o'clock to be reconvened at 2:15 p.m.

### Third Meeting, Sunday, May 20, 1945 Ramsey County Medical Society Auditorium Saint Paul, Minnesota

Speaker Will called the meeting to order, Sunday afternoon at 2:25 o'clock. Dr. A. J. Lewis reported that a quorum was present, after which Dr. F. J. Hirschboeck of Duluth was called upon to give the Necrology Report. The House of Delegates rose in silent tribute to the memory of the departed.

Speaker Will then asked for a report from the Chairman of the Resolutions Committee, and Dr. Hirschboeck presented separate resolutions commending the following agencies: (1) The authors of the Enabling Act in both houses of the Legislature and other members who had supported the Act; (2) Stations WCCO and WLB for gratuitously and liberally giving the Minnesota State Medical Association broadcasting time for the dissemination of medical information to the public; and (3) Officers and members of the Ramsey County Medical Society, Mr. Rosell and his staff, for extending their facilities and services for conducting the business sessions of the House of Delegates. These resolutions were duly accepted by the delegates.

Dr. W. L. Burnap then was called on to present the report of the luncheon session of the Council, which report was accepted.

Speaker Will declared that the next order of business was the election of officers of the Minnesota State Medical Association, and the following were unanimously elected:

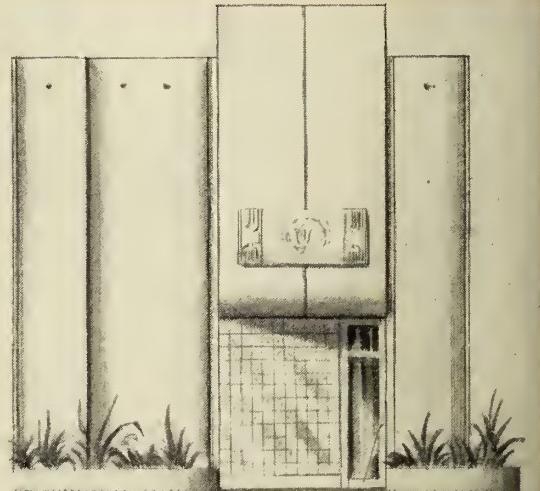
President-elect: E. J. Simons of Duluth  
First Vice President: Max Alberts of St. Paul  
Second Vice President: W. C. Chambers of Blue Earth  
Secretary: B. B. Souster of St. Paul (re-elected)  
Treasurer: W. A. Condit of Minneapolis (re-elected)  
Speaker of the House of Delegates: W. A. Coventry of Duluth  
Vice Speaker of the House of Delegates: C. G. Shepard of Hutchinson  
Councilor, Fourth District: A. E. Sohmer of Mankato (re-elected)  
Councilor, Sixth District: A. E. Cardle of Minneapolis (re-elected)  
Councilor, Seventh District: W. W. Will of Bertha Falls (re-elected)  
Delegates to the American Medical Association: F. J. Savage of St. Paul (re-elected); E. W. Hansen of Minneapolis (re-elected)  
Alternates: for F. J. Savage, George Earl of St. Paul (re-elected); for E. W. Hanson, W. W. Will of Bertha Falls (re-elected).

It was then moved, seconded, and carried that the invitation extended by Dr. W. D. Brodie to hold the 1946 meeting in Saint Paul be accepted.

Upon motion by Dr. W. T. Weum, duly seconded and carried, the secretary was instructed to draw up a resolution to be sent to Speaker Will in appreciation of his excellent services as Speaker of the House of Delegates.

Whereupon, at one minute to three the Ninety-second Annual Meeting of the House of Delegates was adjourned.

## MEDICAL CENTER FOR RENT

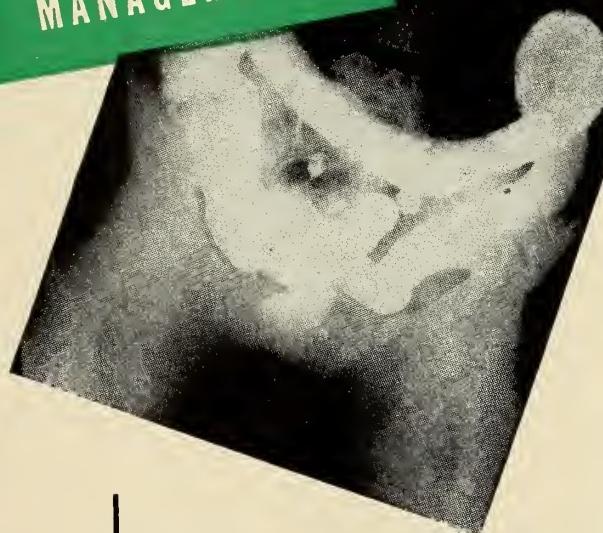


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# SEARLE

RESEARCH IN THE SERVICE OF MEDICINE

# ♦ Reports and Announcements ♦

## MEDICAL BROADCAST FOR OCTOBER

The following radio schedule of talks on medical and dental subjects by William O'Brien, M.D., Director of Postgraduate Medical Education, University of Minnesota, is sponsored by the Minnesota State Medical Association, the Minnesota State Dental Association, the Minnesota Hospital Association and the University of Minnesota School of the Air.

## MEDICAL BROADCAST FOR OCTOBER

Oct. 3—11:00 A.M.	KUOM	Your Health is in Your Hands
Oct. 4—5:15 P.M.	WCCO	Medical Care and Hospital Service
Oct. 6—11:30 A.M.	KUOM-KROC	Medicine in the News
Oct. 10—11:00 A.M.	KUOM	An Erect Body is a Well-Balanced Body
Oct. 11—5:15 P.M.	WCCO	RH Factor
Oct. 13—11:30 A.M.	KUOM-KROC	Medicine in the News
Oct. 17—11:00 A.M.	KUOM	Your Feet Are Your Body's Foundation
Oct. 18—5:15 P.M.	WCCO	Training the Very Slow Child
Oct. 20—11:30 A.M.	KUOM-KROC	Medicine in the News
Oct. 22—4:45 P.M.	WCCO	Your Hospital in Peace Time
Oct. 24—11:00 A.M.	KUOM	Skin Is Nature's Covering for the Body
Oct. 25—5:15 P.M.	WCCO	Rampant Caries
Oct. 27—11:30 A.M.	KUOM-KROC	Medicine in the News
Oct. 31—11:00 A.M.	KUOM	Clean Hair Is Healthy Hair

## INTERNATIONAL COLLEGE OF SURGEONS

The International College of Surgeons will hold its Tenth Annual Convention and Convocation on December 7 and 8, 1945, at the Mayflower Hotel, Washington, D. C. At this time approximately 200 men will receive their Fellowships. A scientific program is planned for both days. Convocation exercises will be held Friday evening, December 7, in the Mayflower Auditorium.

## POSTGRADUATE COURSE IN ALLERGY

The American College of Allergists offers an intensive, practical course in allergy for five and one-half days, November 5 to 10, inclusive, at Thorne Hall, Northwestern University, Superior and Lakeshore Drive, Chicago, Illinois. Men in the service will be admitted free of charge, and for others the registration fee is \$100.

Inquiries should be addressed to the Secretary of the American College of Allergists, 401 La Salle Medical Building, Minneapolis 2, Minnesota.

## OMAHA MIDWEST CLINICAL SOCIETY

The Omaha Mid-West Clinical Society will hold its thirteenth annual assembly in Omaha, October 22 to 26, inclusive. Headquarters will be at Hotel Paxton.

A full five-day program again this year, which will

include addresses, clinics and round table discussions by distinguished guests, and symposia and lectures by members of the Society. There will be a daily motion picture program and scientific and technical exhibits.

Following is a partial list of distinguished guests:

Elmer Belt, Los Angeles, California (Urologist); Sylvester N. Berens, Seattle, Washington (Neurosurgeon); Guy A. Caldwell, New Orleans, La. (Orthopedic Surgeon); Archibald D. Campbell, Montreal, Canada (Gynecologist-Obstetrician); Burrill B. Crohn, New York City (Internist, Gastro-enterology); Charles A. Doan, Columbus, Ohio (Internist, Research); Lester R. Dragstedt, Chicago, Illinois (Surgeon, Physiology); Robert H. Felix, Washington, D. C. (Psychiatrist); Mr. J. Ketchum, Detroit (Exec. Sec., Michigan Medical Service); Edward J. McCormick, Toledo, Ohio (Chairman, Council on Medical Service and Public Relations, American Medical Association); Alan R. Moritz, Boston, Massachusetts (Pathologist, Legal Med.); John A. Toomey, Cleveland, Ohio (Pediatrician-Contagious Dis.); Henry P. Wagener, Rochester, Minnesota (Ophthalmologist).

Titles of the symposia to be presented on Tuesday and Thursday are as follows: The Arthritides; Bleeding from the Alimentary Tract; Fractures; Head Injuries; Penicillin; Technic for Lessening the Morbidity and Mortality in Obstetrics. Friday, October 26, will be given over to a panel on Military Medicine presented by personnel of the United States Army Medical Corps.

All Medical Officers of the United States Army, Navy and Public Health Service will be admitted without payment of the usual five dollar registration fee.

Additional information may be obtained from the Secretary-Director, Dr. Roy W. Fouts, 1031 Medical Arts Building, Omaha 2, Nebraska.

## NORTHERN MINNESOTA MEDICAL ASSOCIATION TO OBSERVE TWENTY-FIFTH ANNIVERSARY

With the ban on meetings lifted, an interesting all-day conference will be staged November 3 by the Northern Minnesota Medical Association at Fergus Falls where the Society was organized twenty-five years ago. An interesting symposium is being planned for the morning session to be followed by a luncheon, an afternoon session and a banquet in the evening. Several prominent speakers, to be announced later, have been invited to speak.

An open invitation is extended to all physicians who would like to attend.

## WASHINGTON COUNTY

The Washington County Medical Society held its regular monthly meeting September 11, 1945, at Stillwater.

A report of the meeting of the House of Delegates  
*(Continued on Page 869)*



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For many, many years it has been our privilege to work closely with physicians and surgeons in the design, improvement and manufacture of scientific supports to meet the physiological, surgical and maternity needs of their patients. Evolved by the late Mr. S. H. Camp, the basic system of *patented adjustment principles*, incorporated in models graded to various types of *body build*, provides the endless number of combinations made necessary for precise fitting by the endless variations in the human figure. This has met the test of 40 years of practice. Accepted by the medical profession from the first, Camp Supports are today recognized as *standard* throughout the United States and many foreign countries. In this challenging new era we once again pledge to keep faith with the profession: FIRST, by maintaining consistent research; SECOND, by manufacturing scientific supports of the finest quality in full variety at *prices based on intrinsic value*; THIRD, to assure precise filling of prescriptions through the regular education and training of Camp fitters; and FOURTH, to adhere to the policy of ethical distribution. We trust that these standards will continue to be your hallmark of quality and your symbol of confidence wherever scientific supports are indicated.

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- You have a dependable treatment for menopausal symptoms when you administer a dependable solution of estrogenic substances.
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## In Memoriam

## DEMETER KALINOFF

Dr. Demeter Kalinoff of Stillwater, Minnesota, died in Miller Hospital, Saint Paul, on September 15, 1945, at the age of seventy-five years. He had been in failing health for the past three years.

A native of Bulgaria, he was born on December 15, 1870. Dr. Kalinoff obtained his early education in his native land and during 1885-6 was a soldier in the Bulgarian army, the country being at that time at war with Serbia. In 1889, when a young man of nineteen, his adventurous spirit prompted him to seek the opportunities of the new world and he remained for a year in the East, living near Fredonia, New York. In 1891 he became a student in the high school at Ann Arbor, Michigan, and was graduated with the class of 1894. In the fall of the latter year he entered the University of Michigan, which he attended for seven years, winning the degree of B.S. in 1899 and that of M.D. in 1901. He spent a few months as a nurse in the Presbyterian Hospital of Chicago and for a short period was connected with a sanitarium at Lake Geneva, Wisconsin.

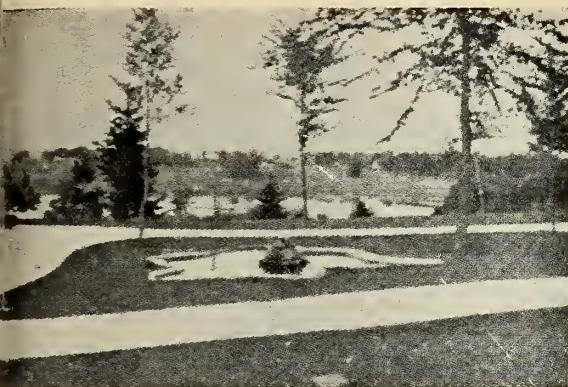
In the spring of 1902 he opened an office in Stillwater, and his practice gradually grew with the years. Along with his private practice, he was attending physician at the Minnesota State Prison from 1903 to 1935. In 1911 he went abroad for postgraduate work, spending six months in Vienna, Austria. Before returning to the United States, he visited his relatives whom he has seen but once since leaving home.

On June 7, 1911, Dr. Kalinoff was united in marriage to Miss Alice Pennington, one of Stillwater's native daughters, and they became the parents of four children, Dr. Frederick, Naidena R., Helen (Mrs. John Davis) and Vacil D.

Dr. Kalinoff was a member of the Elks Lodge No. 179, St. John's Lodge No. 1 A. F. & A. M., also a member of the Bayard Commandery, No. 11, the Washington Chapter 17 and the Osman Temple Shrine of Saint Paul. He was a member of the Washington County Medical Society, Minnesota State Medical Association and American Medical Association. In 1938 he was elected to the Stillwater Hall of Fame because of his outstanding service to his community.

Few men in the medical profession or in any walk of life gained the respect, admiration and love of their patients or fellow citizens that Dr. Kalinoff enjoyed. His life was truly one of living for his patients, and no sacrifice was too great for him as long as it was to benefit the sick and distressed, his only hobby being the earnest wholehearted practice of medicine. The community and medical profession will long miss the friendliness, professional knowledge and skill of such a fine man and physician. No one, except those in close association with him, can fully appreciate the lovable character and kindness that was in him.

F. M. McCARTEN.



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## ◆ Of General Interest ◆

Captain and Mrs. Russell Carlson and daughter recently returned to Stillwater where Mrs. Carlson and daughter will remain while Dr. Carlson is in service.

\* \* \*

Dr. Richard C. Horns has become associated with Dr. Erling W. Hanson in the practice of Ophthalmology, with offices at 527 Medical Arts Building, Minneapolis.

\* \* \*

Dr. C. M. Kelsey has closed his downtown office and is continuing his practice from his office at 1583 No. Hamline Ave., St. Paul 2, Minn.

\* \* \*

Dr. E. R. Samson recently made a brief visit to Stillwater before departing for Rice Lake, Wisconsin, where he was married. Dr. and Mrs. Samson are now at home in Stillwater.

\* \* \*

Dr. Frank Brigham, Watkins physician and surgeon, has been in Northwestern Hospital, Minneapolis, for treatment. Dr. Brigham is a brother of Dr. Charles F. Brigham, of St. Cloud.

\* \* \*

Dr. DeWitt W. Englund has terminated his association with the Davis Clinic at Wadena and accepted a fellowship in internal medicine at the Mayo Foundation.

\* \* \*

Because of the demands of other professional work, Dr. Irving H. Kiesling, Coleraine, has resigned from the Lake Julia Sanatorium Commission and the Welfare Board, offices he has filled since 1926.

\* \* \*

Dr. Charles L. Sherman has sold his hospital, building and equipment, in Luverne to the city, which will operate it hereafter. Closed since July 15, the hospital reopened for service on August 1.

\* \* \*

Dr. Henry Silver has closed his offices in Sebeka and moved with his family to Culver City, a suburb of Los Angeles. Dr. Silver will be associated with another physician with offices in Los Angeles.

\* \* \*

Dr. Robert Swanson, who has been associated with Dr. Frank G. Folken at Albert Lea, has opened offices of his own in the Hyde Building. Dr. Swanson will specialize in diseases of eye, ear, nose and throat.

\* \* \*

Dr. Miles J. O. Gullingsrud, recently discharged from the Army Medical Corps, has become associated with Dr. J. J. Swendson in the practice of gynecology and obstetrics, with offices at 1240 Lowry Medical Arts Building, Saint Paul.

\* \* \*

James Hagen, son of Dr. O. J. Hagen of Moorhead, was killed in a liberator flight over Lynz, Austria, July

25, 1944. He had been reported missing following the flight but recently was declared dead by the War Department.

\* \* \*

Remodeling of the building purchased for hospital purposes by Dr. Ralph B. Johnson, Lanesboro, has been completed, and the hospital is now in operation. It has a nine-bed capacity, and the staff includes three registered nurses.

\* \* \*

Dr. George F. Schmidt, Minneapolis, recently honorably discharged from military duty, has returned home and is again in practice. Dr. Schmidt has been serving as medical officer at the Officer's Candidate School at Fort Benning, Georgia.

\* \* \*

Captain Charles E. Stafford, Baudette, who has been in service in Australia for the past two years, has been honorably discharged, and will return to his practice in Baudette following the completion of a short "refresher" course at the University of Minnesota.

\* \* \*

Dr. H. J. Brekke, a former member of the Washington County Medical Society, recently visited Stillwater while on leave. He has seen service in England, France, Holland and Germany. He has gone to the Medical Officers' Post at Hot Springs, Arkansas, for reassignment.

\* \* \*

Lederle Laboratories, Inc., a unit of American Cyanamid Company, has renewed for another year its professional service radio program "THE DOCTORS TALK IT OVER" which is heard weekly coast-to-coast over the American Broadcasting Company network on Tuesday nights.

\* \* \*

Stricken with a sudden heart attack on July 22, Dr. Abel R. Ellingson, Detroit Lakes, was taken in an ambulance to St. Barnabas Hospital, Minneapolis, for specialized treatment. At this time Dr. Ellingson is reported as improving, but his condition is still considered serious.

\* \* \*

Dr. Hovard K. Helseth, formerly associated with the Bratrud Clinic at Thief River Falls and a member of the staff of St. Luke's Hospital there for the past eight years, has gone to Chicago for postgraduate study. On completion of his work, Dr. Helseth will engage in private practice at Fergus Falls.

\* \* \*

While returning from Rochester, where he had driven a patient, Dr. H. J. Just, Hastings, suffered leg and chest injuries in a head-on collision near Zumbrota. Both cars were completely demolished.

Before opening his offices in Hastings, Dr. Just had been in practice at Lafayette.

(Continued on Page 860)



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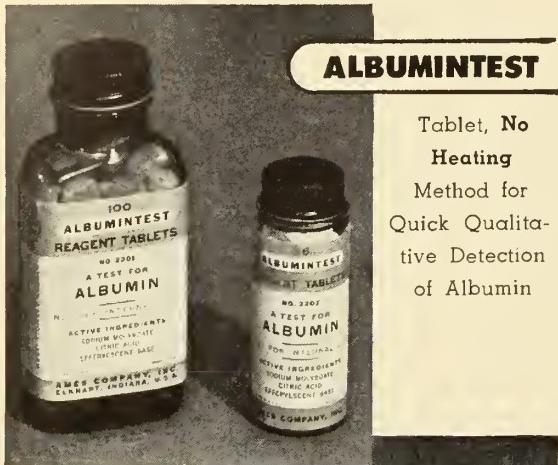
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Dr. John F. Briggs, Saint Paul, successfully passed the written examination for Fellowship in the American College of Chest Physicians held in June, 1945, and will be awarded his Fellowship Certificate at the next Convocation of the College. The Convocations are held in conjunction with the annual meetings of the College which will again be resumed in 1946.

\* \* \*

Dr. Dexter Lufkin, Northfield, has been commissioned lieutenant commander in the Medical Corps of the United States Navy. Dr. Lufkin graduated from Carleton in 1928 and received his medical degree from the University of Minnesota four years later. He has been practicing in Northfield since 1933. Dr. Lufkin's family will remain in Northfield.

\* \* \*

Comdr. J. B. Vail has been on duty at the U. S. Naval Special Hospital, Santa Cruz, California, since March, 1943, as Chief of Clinical Services, Rehabilitation Officer, Deck Court Officer, and Senior Member of Summary Court Martial and Medical Survey Boards. He received a promotion to the rank of Commander (MC) USNR, effective on July 10 this year.

\* \* \*

Dr. John L. Emmett, Mayo Clinic, was guest speaker at a recent meeting of the Utah State Medical Association at Bushnell General Army Hospital in Brigham City, Utah. Dr. Emmett's subject was "Cord Bladder." Later in the same week Dr. Emmett addressed the Southern Idaho Medical Association at Pocatello, Idaho, on "The Bacteriology and Chemotherapy of Urinary Infections."

\* \* \*

Dr. Martin R. Henry, head of staff at the State Hospital in St. Peter, who has been on an enforced vacation of several months as a consequence of serious injuries sustained in an automobile accident, has returned to his duties at the hospital. During his convalescence, however, Dr. Henry was not entirely idle. Cottonwood, his home community, has been without a resident physician for some time, so Dr. Henry was called upon for service on numerous occasions.

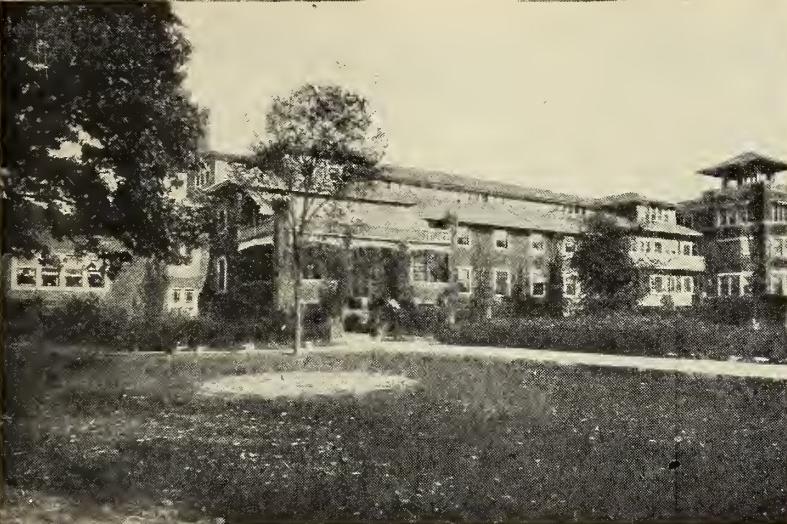
\* \* \*

According to statistics compiled by the Metropolitan Life Insurance Company, the mortality from cancer which has been on a steady increase for a good many years has reached a peak and started to decline. During the past decade the death rate from cancer in women has fallen about 11 per cent and is the lowest it has been for thirty years in the age group thirty-five to sixty-four. Among white policyholders, at no age beyond twenty-five has there been an increase in death rate from cancer during the past ten years. In October, the Metropolitan will carry on an intensive publicity campaign which will include the distribution of a special packet of new information to practicing physicians.

\* \* \*

The promotion of Dr. Philip S. Hench from lieutenant colonel to colonel has been announced by the War Department. Colonel Hench was head of the

(Continued on Page 862)



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## OF GENERAL INTEREST

department of rheumatic diseases at the Mayo Clinic when he entered military service in 1942. He is now chief of medical service and director of the rheumatism center at the Army and Navy Hospital at Hot Springs, Arkansas.

Colonel Hench, an international authority in his field, was awarded the Heberden Medal in London in 1942, in recognition of his outstanding research in rheumatic diseases. No other American has ever received this coveted award.

\* \* \*

After twenty-eight years of practice in Moorhead, Dr. Bottolf T. Bottolfsen, has announced his retirement. A graduate of the University of Minnesota School of Medicine, Dr. Bottolfsen studied in London, Berne, and Vienna during 1926, 1929, and 1932, specializing in eye, ear, nose, throat and bronchoscopy. In 1937 he was in India, and performed a number of eye operations. During World War I he served as a lieutenant in the Medical Corps. Although his practice has always been heavy, he has been health officer and, later, mayor of Moorhead.

Dr. and Mrs. Bottolfsen will continue to make their home in Moorhead.

\* \* \*

The Japs wantonly destroyed the medical libraries of the University of the Philippines College of Medicine and Surgery and of Santo Tomas College of Medicine and Surgery in Manila. The Academy-International of Medicine is, therefore, asking the members of the

medical profession of the United States and Canada to donate books and periodicals to build up these medical libraries. To avoid too great a duplication, physicians and medical libraries are requested to submit lists of books and periodicals they are willing to give to the Academy-International of Medicine, Suite 101, Liberty Building, Topeka, Kansas. They will then be notified what items are desired and where and how to ship them.

\* \* \*

November 8, 1945, will be the fiftieth anniversary of the discovery of x-ray by the German physicist, Wilhelm Conrad Roentgen. As is well known, the discovery of the new rays was accidental and their nature not known —hence, the term x-ray. The medical profession was quick to adopt the use of the x-ray, although its use was limited to the diagnosis of bone changes during the first fifteen years following its discovery. Since then, development of technique has made the x-ray of inestimable value in the investigation of almost every part of the human body. Its value as a therapeutic agent has also been recognized. Roentgenology has become an important medical specialty. The fiftieth anniversary of the discovery by Roentgen merits commemoration.

\* \* \*

The American people contributed over sixteen and a half millions of dollars to the National Foundation for Infantile Paralysis in 1945 as compared with about

(Continued on Page 864)



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GYNECOLOGY—Two-Week Intensive Course, October 22.

OBSTETRICS—Two-Week Intensive Course, October 8.

ANESTHESIA—Two-Week Course in Regional, Intra-venous and Caudal Anesthesia.

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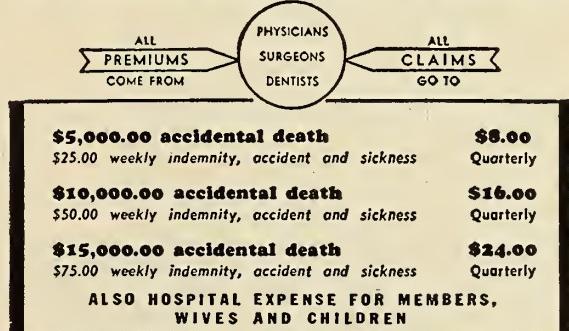
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eleven million in 1944. Fifty per cent is allocated each year to the national headquarters of the National Foundation to finance research into the cure and prevention of infantile paralysis and a broad educational program which includes scholarships in orthopedic nursing, physical therapy, orthopedic surgery, neurology, and health education. Half of the sum is retained by County Chapters of the National Foundation to carry on services to victims of the disease. It has been announced that up to August 11, 1945, some 3,558 cases have been reported this year as compared with 5,008 for the same period last year.

\* \* \*

Dr. Truman A. Hedemark, formerly of Milbank, South Dakota, is now affiliated with the Bratrud Clinic at Thief River Falls. Dr. Hedemark is a brother of Dr. Homer H. Hedemark, who has been a member of the Clinic for some time.

Before going to Milbank, Dr. Hedemark had been assistant city and county physician in Saint Paul. He is a graduate of Hamline University, and he took his medical degree at St. Louis University. His internship was served at St. Mary's Hospital in East St. Louis, and Ancker Hospital in Saint Paul. He has done post-graduate work in Minneapolis, Rochester, Chicago and St. Louis.

Dr. Hedemark is a veteran of Naval Air Service, World War I, and is prominent in the American Legion. He has been president of the Whetstone Valley District Medical Society for three terms.

Dr. Harry Lee Parker has returned to the Mayo Clinic as an associate in neurology after an absence of eleven years. Dr. Parker first came to the Clinic as a fellow in 1919. In 1925 he was made an associate in neurology and he filled the position until 1934, when he resigned to practice in Dublin, Ireland. During his residence there, Dr. Parker was honorary professor of neurology at Trinity College, staff physician at Richmond, Whitworth, and Harwicke Hospitals, and Stewart Hospital, and consulting neurologist at the Meath, Merrers, and Orthopedic Hospitals.

He is a fellow of the Royal College of Physicians of Ireland, also the Royal Society of Medicine of England, and he is a member of the British Medical Association, the Association of British Neurologists, the Royal Academy of Medicine in Ireland, the American Neurologists, the Royal Academy of Medicine in Ireland, the American Neurological Association, and he is an honorary member of the Central Neuro-Psychiatric Society.

\* \* \*

Major William Heck is home on leave in Saint Paul after serving eleven months overseas.

Commander Warner Ogden was home on leave in Saint Paul this summer after serving fifteen months overseas; he is now stationed at Corvallis, Oregon.

Lieutenant Commander B. E. O'Reilly of Saint Paul has been assigned Chief Medical Officer on Admiral Turner's Flagship, Rocky Mountain.

Major Wallace P. Ritchie was the first doctor in the

(Continued on Page 866)

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## OF GENERAL INTEREST

United States to be discharged on the point system; he was overseas for thirty-three months. Dr. Ritchie opened his office in the Lowry Building, Saint Paul, on September 15.

Lieutenant W. G. Johanson, USNR, is now stationed at Athens, Georgia, after serving twenty months overseas.

Captain E. V. Kenefick, Saint Paul, has been transferred to the Regional Hospital, SAAAB, Santa Ana, California.

Lieutenant I. M. Karon, USNR, is now stationed at the U. S. Naval Depot, Yorktown, Virginia, after having served twenty-seven months of destroyer duty.

Captain Martin E. Janssen of Saint Paul received the Bronze Star Medal for meritorious service in Burma.

Lieutenant Sam Herman, USNR, has received a medical discharge and has opened his office in the Lowry Building.

Major John Earl is home on leave in Saint Paul after having served thirty-two months overseas.

Colonel Joseph F. Borg of Saint Paul is home on leave; he has received the Bronze Star Medal.

Major Jerome Hilger has received his discharge from service and has resumed practice at 444 Lowry Medical Arts Building, Saint Paul. He has served thirty-three months overseas.

Commander S. W. Shimonek of Saint Paul at present is stationed at the U. S. Naval Hospital, Mare Island, California.

## HOSPITAL NEWS

The Board of Directors of St. Luke's Hospital, Fargo, North Dakota, has announced the appointment of Martin Langhaug as superintendent. Mr. Langhaug is a former resident of Hinckley, where he was superintendent of schools.

\* \* \*

The committee appointed by the Iowa Legislature to make a survey of mental institutions in Iowa and other states has reported recovery of patients at the Rochester State Hospital as particularly outstanding. Dr. Samuel W. Hamilton, of the United States Public Health Division, Washington, D. C., assisted the committee, which included Dr. John R. Gardner, of Lisbon, Senators Herman Knudson, of Mason City, and Alden L. Doud, of Douds, and Representative John S. Hefner, of Webster City.

Dr. Magnus C. Peterson, superintendent of the Rochester Hospital, was host to the group and placed all the institution's statistics at their disposal.

A fund of \$9,000,000, established by the Iowa Legislature for improvement of state hospitals, will be allocated according to recommendations of the committee based on their study of similar institutions in other states.

\* \* \*

St. Ansgar's Community Hospital Association, Moorhead, inaugurated a campaign on October 1 to raise \$400,000 for a new 100-bed hospital to be operated by the Franciscan Sisters, who have been in charge of the



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present hospital. According to present plans, the old structure will be converted into an old folks' home.

\* \* \*

Miss Myrtle Skoog, superintendent of Immanuel Hospital at Mankato, has resigned to become assistant superintendent of a 480-bed government hospital in Honolulu, T. H. Miss Skoog is a graduate of the nursing school, Swedish Hospital, Minneapolis. She came to Immanuel Hospital as instructress of nurses in 1925, and in 1930 was made superintendent of the hospital. Under her administration the hospital became accredited by the American College of Surgeons.

\* \* \*

A \$30,000 addition to the Children's Hospital, Saint Paul, which will increase capacity by 30 per cent was begun during the last week of August. A fourth floor will be added with glass-enclosed wards, which will accommodate twenty additional patients. At the present time only sixty-five patients can be housed.

Dr. Walter Ramsey, secretary of the Board of Trustees of the hospital, says that the addition will be completed by December.

\* \* \*

Classes in training of practical nurses are being conducted at Franklin Hospital, in an effort to relieve the critical shortage of nurses. The first class consisting of twenty-three members, graduated last May. The course is completed in nine months and classes begin at four-month intervals throughout the year. September 6 was the most recent enrollment date.

Franklin Hospital is intended primarily for the care of convalescent and chronic patients.

### Minnesota Hospital Survey

A survey of Minnesota hospitals "as-they-are" is being directed by Governor Thye's Minnesota Hospital Study Committee. Ray Amberg, Superintendent of the University Hospitals, has been named chairman of the committee.

This survey which will include all institutions offering bed care for the sick, is part of a broad program of hospital studies being made by the various states and co-ordinated and assisted by the Commission on Hospital Care.

The national Commission on Hospital Care was established by the American Hospital Association. It now functions as an independent agency gathering facts about the extent and adequacy of hospital service. The chairman of the national Commission is Thomas S. Gates, Chairman of the University of Pennsylvania. The work of the Commission is financed by the W. K. Kellogg Foundation, The Commonwealth Fund, and The National Foundation for Infantile Paralysis.

At the stimulation of the Commission's technical staff, headed by A. C. Bachmeyer, forty-two states and the District of Columbia have now taken some action toward making surveys.

The members of the Minnesota Committee represent various health-interested groups in the state. The hospital association, medical association, dental association, nursing association, pharmaceutical association, division of public institutions and the state board of health are all represented.

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Dr. R. O. Sather, recently discharged from military service, has resumed his duties at the Northwestern Clinic in Crookston. A lieutenant colonel in the Army Medical Corps, Dr. Sather was stationed in the Southwest Pacific for over three years.

\* \* \*

Dr. and Mrs. S. L. Myre, of Greybull, Wyoming, have announced the engagement of their daughter, Carol Marie, to Dr. Benjamin F. Fuller, of Saint Paul. Dr. Fuller, who is now serving his internship at the University Hospital, is the son of the late Dr. Benjamin Fuller, Saint Paul. Miss Myre is a senior at the University of Minnesota.

\* \* \*

Dr. W. B. Richards, St. Cloud, was guest speaker at a recent luncheon meeting of the local Lions Club. Dr. Richards discussed the "wonder drugs"—Sulfas, Penicillin, Thyrothrysin and Thiouracil—and latest methods of immunization.

\* \* \*

Drs. D. H. Garlock, E. W. Johnson, Percy Watson, of Bemidji, and Dr. Mary Ghostley, of Lake Julia Sanatorium, attended the meeting of the Upper Mississippi Medical Society held at Ah-Gwah-Ching on September 15.

\* \* \*

Through courtesy of the board of directors of Sand Beach Sanatorium, Dr. R. R. Hendrickson, director of the sanatorium, will assist Dr. C. W. Moberg in his Lake Park offices on week days from 1 until 3 p.m. as long as the present medical emergency lasts. Dr. Hendrickson only recently returned to his post at the sanatorium from service in the Army's Public Health Division.

\* \* \*

Dr. L. A. Laikola, superintendent of the Soudan Hospital for the past two years, has resigned to engage in private practice. Dr. Gordon Martin, formerly of Coleraine, who has been in California, has been appointed Dr. Laikola's successor.

\* \* \*

Two Minnesota physicians, Captain Herschel Kaufman, of Minneapolis, and Captain Albert E. Krieser, of Mankato, were among the twenty-four army doctors who arrived at La Guardia Field from the European theater on September 24. All were scheduled for discharge in the near future.

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## BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

**PEDIATRIC X-RAY DIAGNOSIS.** A Textbook for Students and Practitioners of Pediatrics, Surgery and Radiology. John Caffey, A.B., M.D., Associate Professor of Pediatrics, College of Physicians and Surgeons, Columbia University; Associate Pediatrician and Roentgenologist, Babies Hospital and Vanderbilt Clinic, New York City; Consulting Pediatrician, Grasslands Hospital, Westchester County, N.Y., and St. John's Hospital, Yonkers, N.Y. 838 pages. Illus. Price, \$12.50, cloth. Chicago: Year Book Publishers, 1945.

**PLASTER OF PARIS TECHNIQUE.** In the Treatment of Fractures and Other Injuries. T. B. Quigley, Lt. Col., Medical Corps, Army of the United States; Instructor in Surgery, Harvard Medical School (in absentia); Junior Associate in Surgery, Peter Bent Brigham Hospital, Boston (in absentia). 107 pages. Illus. Price, \$3.50, cloth. New York: The Macmillan Co., 1945.

**ESSENTIALS OF CLINICAL ALLERGY.** Samuel J. Taub, M.D., Professor of Medicine, Cook County Graduate School of Medicine; Attending Physician in Medicine, Cook County Hospital; Fellow of American Academy of Allergy; Formerly Assistant Professor of Medicine, Rush Medical College of University of Chicago. 198 pages. Price, \$3.00, cloth. Baltimore: Williams & Wilkins Co., 1945.

**THE OSSEOUS SYSTEM.** A Handbook of Roentgen Diagnosis. Vincent W. Archer, M.D., Professor of Roentgenology, University of Virginia, Department of Medicine. 320 pages. Illus. Price, \$5.50, cloth. Chicago: Year Book Publishers, 1945.

**WHAT PEOPLE ARE.** A Study of Normal Young Men. Clark W. Heath, in collaboration with Lucien Brouha, Lewise W. Gregory, Clark C. Seltzer, Frederic L. Wells and William L. Woods. The Grand Study, Department of Hygiene, Harvard University. 141 pages. Illus. Price \$2.00, cloth. Cambridge, Mass.: Harvard University Press, 1945.

## WASHINGTON COUNTY

(Continued from Page 854)

of the Minnesota State Medical Association was presented among other matters of interest. Dr. Walter P. Gardner of Saint Paul entertained the members for about an hour with a lecture on "The Relation of Psychiatry to General Practice," a difficult subject comprehensively presented.

E. SYDNEY BOLEYN, Secretary

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## CLINICAL-PATHOLOGICAL CONFERENCE

(Continued from Page 822)

DR. HERMAN WOLFF: The particular thing that I thought of was the relation of one type of anemia which has been sort of a dumping ground in recent years with this type of case that has been outlined. I would like to know whether in their opinion this condition which has been called achrestic anemia is perhaps at the end stage of atrophy of the bone marrow which they have been seeing. For a long time, we have seen pernicious anemia patients who fail to respond to liver therapy, being classified under the term of achrestic anemia. This is a macrocytic anemia that is usually diagnosed as pernicious anemia, that we have discussed tonight. Dr. Ikeda and I had one such case not so long ago, and we were fortunate in getting an autopsy. At autopsy, the bone marrow was markedly hyperplastic such as we have been taught to expect in the usual case of pernicious anemia. This patient failed to respond to liver therapy, and the terminal affair was that of bronchopneumonia.

DR. SOMMERS: I just want to mention one other form of treatment. That is the use of blood transfusions. We believe that transfusions in pernicious anemia in relapse are contra-indicated because they slow up the process of readjustment of hematopoiesis toward normal. I have a patient now who has a severe relapse with about 900,000 red cells and complicated by lobar pneumonia. That case will need several small transfusions. Some time ago at the Minneapolis General Hospital, a patient came in with severe heart failure secondary to the anoxemia of a severe relapse of pernicious anemia, and we used packed red blood cells, a trick that I think we should all remember, particularly in the hospital where we have a blood bank as in this one. Transfusion of red cells is quite simple to do. The blood is drawn the day before and permitted to stand in the refrigerator over night. Under sterile technique, most of the plasma on top is pipetted off. We found relatively little danger of clotting in the tube as you might expect with such a rather concentrated red blood cell solution. Thus, we give what the patient needs and do not add to the heart failure by the administration of plasma which would overburden the circulation. On the whole, however, we do not give transfusions in pernicious anemia.

With reference to the so-called "achrestic anemia," we are of the opinion that sufficient data are not available to accept it as a clinical entity. The macrocytic anemia of liver disease has been and still is confused with pernicious anemia by the casual observer. There is the possibility that cirrhosis of the liver and pernicious anemia may occur in the same individual, and obviously the degree of liver pathology will determine the response to therapeutic measures. And again, the bone marrow may not utilize the liver principle. Because of an atrophic state, of the presence of another pathologic process or of some other unknown complications, the synchronization between the liver and the bone marrow is permanently broken. A refractory behavior of the patient to specific therapy is the ultimate sequela.

## THE LATEST BIRTH FIGURES

As the statisticians predicted, the birth rate fell in 1944 below the peak year of 1943. The Census Bureau in Washington recently announced that there were nearly 2,800,000 registered births in the United States last year, compared with the nearly 3,000,000 of the previous year. The provisional birth rate for 1944 was 20.2 per 1,000 population falling 6 per cent from 21.5 in 1943. The number of births is divided as follows: 2,454,700 White or 87 per cent of the total, 324,183 Negro or 11.6 per cent, 15,917 or 0.6 per cent were of other races, including 10,541 Indians, 2,889 Japanese and 1,291 Chinese.—*Briefs*, October, 1945.

## Classified Advertising

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# Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

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November, 1945

No. 11

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## PATHOLOGIC CONDITIONS IN THE BRONCHI AND THE ESOPHAGUS

### A Roentgenologic and Endoscopic Study

VIRGIL J. SCHWARTZ, M.D.  
Minneapolis, Minnesota

THERE are few, if any, fields in medicine wherein the necessity for co-operation between two or more specialties can be more urgent than in the domain of bronchoesophagology. A thorough clinical examination of the chest, followed by adequate roentgenology and finally by bronchoscopy or esophagoscopy for additional diagnosis or treatment, constitutes teamwork of the utmost importance.

Recent developments in body-section radiography, so-called laminography or planigraphy, form a real and significant addition to our diagnostic armamentarium, particularly in the area of the neck and upper chest. Of course, there are cases in which the history and clinical findings are so unmistakable that x-ray studies might almost be considered superfluous. Such instances are comparatively rare. Much more frequent are those in which we have only a vague and inaccurate history together with more or less indefinite symptoms and physical signs upon which to base our plan of procedure. In such cases, adequate roentgen studies, whether by flat plate or fluoroscope or both, are indispensable and may, occasionally by themselves, dictate the immediate management of the case. They not only disclose the fact that trouble is present, but often show fairly accurately just where it is. The following cases, selected from a recent series, illustrate these features rather well.

The first case is shown to indicate, except for a foreign body, normal anatomic relations.

Presented before the Minnesota Academy of Ophthalmology and Otolaryngology, May 11, 1945.

NOVEMBER, 1945

Case 1.—Mrs. E. K., aged fifty-one, was eating chicken soup when she felt something stick in her throat.

Roentgenology: A distinct, linear shadow appears in the esophagus below the lower border of the cricoid cartilage. This level is the most common site for the incarceration of foreign bodies in the food passages. The narrowest part of the upper esophagus is just behind and below the lower border of the cricoid, approximately in front of the sixth or seventh cervical vertebra. The space between the anterior vertebral wall and the trachea is occupied by the esophagus, the walls of which are normally collapsed so that in this state, usually, no air is seen in it. The posterior wall of the trachea and the anterior surface of the vertebral column are, normally, approximately parallel. The posterior segment of the cricoid cartilage is fairly distinct in many x-ray pictures and serves as a good guide, but must not be confused with a foreign body.

Endoscopy: A flat, triangular chicken bone was found and removed without much difficulty. Sometimes the points of the triangle may be sharp and for this reason care must be exercised not to traumatize the mucosa, nor to increase whatever spontaneous trauma may already be present.

Case 2.—A retired farmer, aged seventy, stated that two days before, while eating pork steak, he felt something stick in his throat. An attempt by another physician to push the foreign body down blindly caused the patient so much pain that the effort had to be abandoned. On the third day he came to Minneapolis, having had nothing by mouth for more than twenty-four hours.

Examination: There was marked tenderness in both sides of the neck. The temperature was 100.2°. There was much sugar in the urine, an excess of sugar in the blood, and other diabetic manifestations.

Roentgenology: In contrast with the previous case in which the posterior tracheal wall, which is in apposition with the anterior wall of the esophagus, was parallel

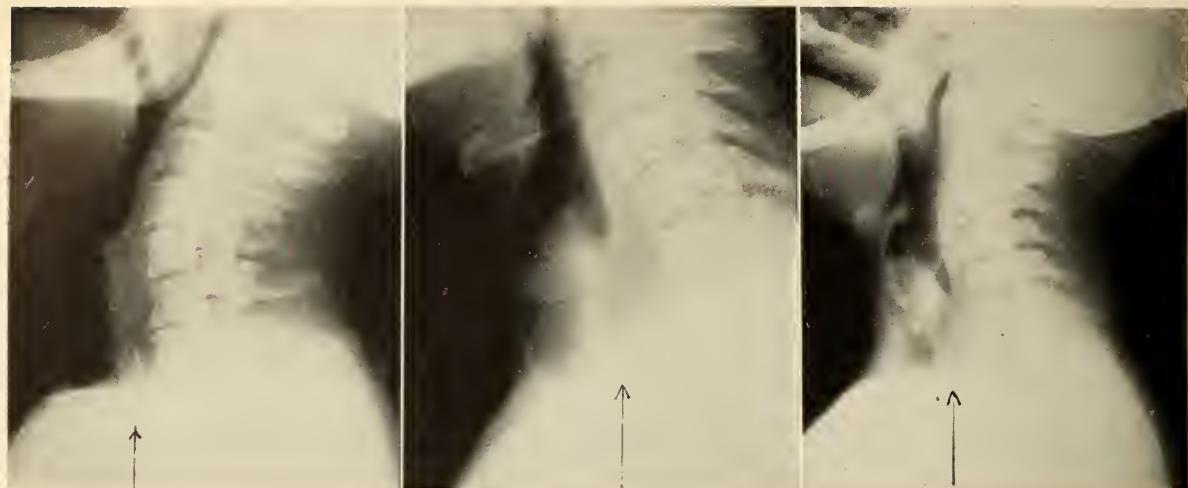


Fig. 1. Case 1. Bone in esophagus.

Fig. 2. Case 2. Perforating foreign body (bone) in esophagus, with abscess.

Fig. 3. Case 3. Cicatricial stenosis of esophagus, unsuspected.

to the anterior surface of the vertebral column, in this case there is a very definite increase in the antero-posterior diameter of the esophagus from the lower border of the cricoid cartilage downward for a distance of three or four vertebrae. This was an interesting finding since it indicated that there was something, either abscess or foreign body, or both, which was causing the swelling of the esophagus in this area. The roentgenologist was able to make out a slight density in the esophagus at this level which suggested a foreign body. Taken in conjunction with the extreme tenderness in the neck, we felt that the problem here was either a very sharp foreign body or an abscess, or both.

**Endoscopy:** While the local anesthetic was being applied to the hypopharynx, the patient suddenly expectorated a considerable amount of thick pus. This came from the esophagus and represented the evacuation of an abscess. There was a large amount of impacted food in the upper end of the esophagus. This was removed piecemeal, but we still felt that something else might be present to cause this impaction. Further search with the esophagoscope revealed a bone about  $1\frac{1}{4}$  inches long and  $\frac{1}{2}$ -inch wide, of which one end was embedded in the posterior esophageal wall, where an abscess had developed. The bone was freed and removed, and we found that the embedded end was needle sharp. With appropriate management for his diabetes, the patient made a good recovery. This case is another argument against the blind manipulation of foreign bodies. I have previously seen and reported two somewhat similar cases, in which bones were forced through the mucous membrane of the posterior wall by blind pressure from above. In one case it was inflicted by a doctor in his own throat.

**Case 3.**—Mrs. E. S., aged forty-seven, stated that at noon she had swallowed some food and it became stuck in her throat. Since that time (about eight hours) she had been unable to swallow anything. She remarked casually that for years she had chewed her food thor-

oughly, but she stated that she had never before had any trouble in swallowing.

**Roentgenology:** X-ray showed an irregular fullness in the upper part of the esophagus which might have been a nonopaque foreign body or a tumor or some other pathological condition extending inferiorly to about 10 cm. below the upper opening of the esophagus. Proper extension of the neck brings a much greater cervical region into the x-ray field than the ordinary position.

**Endoscopy:** Just below the entrance to the esophagus, we found an almost complete cicatricial stenosis, leaving an aperture only 3 to 4 millimeters in diameter at the left of the former esophageal lumen. This had undoubtedly been present for many years.

**Comment.**—This patient has unconsciously been reducing all her ingested food practically to a liquid state before swallowing. She has probably done this most of her life, since she has no recollection of esophageal trauma. But there is no question that she suffered such a trauma at some time during her childhood since we found many irregular masses of scar tissue in this region and these are certainly due to the action of heat, or corrosives such as lye or acids. On the day we saw her, she probably forgot herself and swallowed a large bolus of food which could not go through and which set up severe spasm. She then regurgitated the food, but the spasm persisted so intensely that nothing could pass through. A few years ago, I reported a somewhat similar case in which lye had been intentionally administered to an unsuspecting child by an unscrupulous foster mother for the purpose of diminishing the child's food intake.

**Case 4.**—Mr. A. G., aged fifty-four, was first seen several years ago with the history of expectoration of blood. After that he had no similar trouble until the present complaint, when he found a little blood in his mouth on arising at about eight o'clock. That afternoon and evening and again the next day there were more of these hemorrhages. He did not cough nor vomit, but seemed to "breathe" up this blood, as he put it. Phys-



Fig. 4. Case 3. Cicatricial stenosis of esophagus.



Fig. 5. Case 5. Straight pin in pharynx.

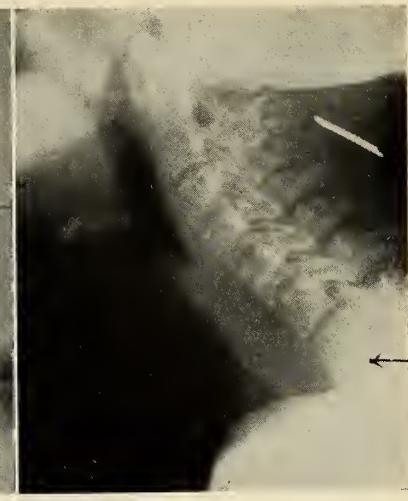


Fig. 6. Case 6. Non-opaque foreign-body (meat) in esophagus.

ical findings and the chest roentgenograms were practically negative.

**Examination.**—No visible bleeding source could be found except for streaks of blood in the trachea, indicating that the blood came from the lung. A small amount of frothy blood appeared in the opening of the right middle lobe bronchus, so I concluded that the hemoptysis originated in this lobe.

**Comment.**—As to the exact nature of the underlying pathology, no one can say definitely at present. It would seem that if this man has a pulmonary lesion which was responsible for his hemorrhage four years ago and is again now, and if it were something serious like a carcinoma far out in the periphery of the lung, it should now be visible in a main bronchus, and also, it should have caused definite general symptoms which he does not have.

**Case 5.**—D. M., aged four, was seen with the history that he had put an ordinary straight pin into his mouth a short time before.

**Röntgenology:** The pin was clearly visible, with the sharp point embedded in the postero-superior wall of the pharynx, the blunt end or head standing down against the tongue.

**Endoscopy:** Without anesthesia, by simple pharyngeal inspection and with forceps, the pin was removed. It was necessary to gain the child's confidence and to gamble somewhat on his good behavior because the pin might have been easily dislodged and swallowed, or inhaled into the trachea and bronchi. Blind manipulation without suitable visibility or instruments, could readily have led to such a complication. It is to emphasize that point that this case is mentioned.

**Case 6.**—Miss O. D., aged thirty-two, came in with the complaint that while eating some meat at dinner, it stuck in her throat causing complete obstruction of the food passage.

**Röntgenology:** Distention of the upper portion of the esophagus is again shown in this case, as in Case 2,

by the pushing forward of the tracheo-esophageal wall as seen in the lateral view.

**Endoscopy:** This case presented considerable difficulty because of a rather marked ankylosis of the mandibular joints, making it impossible for her to open her mouth more than half the usual width. This was further complicated by the projection of a prominent bridge of upper front teeth, as you can see in the x-ray plate. However, by passing the scope to one side of the teeth we were finally able to enter the esophagus and to remove the impacted meat.

**Case 7.**—R. B., aged two and one-half. The parents stated that about two weeks previously, the patient had been given peanuts to eat and since then he had been coughing and wheezing at times. Otherwise the child appeared perfectly well. He was active and played as usual with the other children. There was no fever at any time. His appetite was good.

**Röntgenology:** Pictures of the chest had been taken and showed marked emphysema of the *lower and middle lobes* of the right lung. As a result the heart was pushed to the left. This picture should be remembered when we discuss the next case. I have frequently cited Jackson's observation that during inspiration the bronchi dilate and during expiration they contract a little. If, therefore, a foreign body lodges in a bronchus and *completely* occludes the lumen, air cannot pass and the portion of the lung supplied by the bronchus or bronchi distal to the obstruction soon collapses. Atelectasis then develops. If, however, the foreign body only *partly* occludes the lumen, air will enter beside this by-pass valve during inspiration when the bronchus dilates, but cannot escape during expiration when the bronchus contracts. This leads to emphysema, which was the situation in the present case.

**Endoscopy:** A piece of peanut was removed from the right main bronchus, just above the level of the middle lobe bronchus.

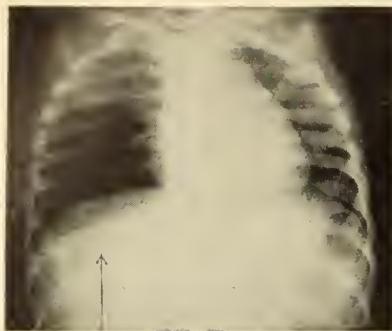


Fig. 7. Case 7. Inspiration. Peanut in right bronchus, above middle lobe orifice. Emphysema of right middle and lower lobes.

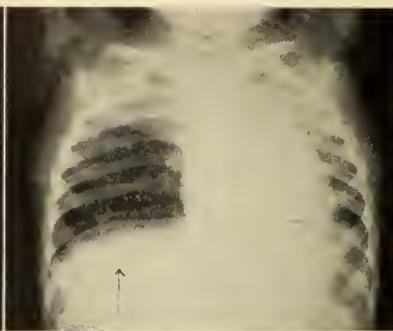


Fig. 8. Case 7. Expiration. Note mediastinal shift to left.



Fig. 9. Case 8. Peanut in right bronchus, below middle lobe orifice. Atelectasis right lower lobe.

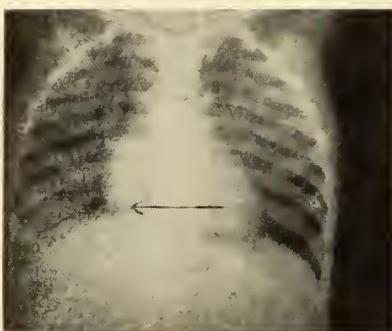


Fig. 10. Case 8. Six days later. Atelectasis has almost disappeared.

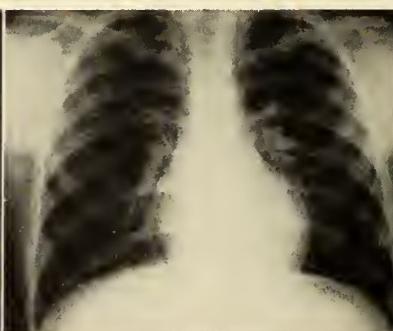


Fig. 11. Case 10. Popcorn in right bronchus. X-ray plate negative. Pendulum motion at fluoroscopy. Inspiration.



Fig. 12. Case 10. Popcorn in right bronchus. Expiration.

**Case 8**—H. H., aged twenty months. The parents stated that while the child was eating peanuts two days before, he began to cough, and this had persisted. When seen by us the child had little fever, but his respiratory rate was about fifty-four per minute.

**Roentgenology:** The lower lobe of the right lung showed definite *atelectasis*, indicating a *total* obstruction of the bronchus in this region, as contrasted with the emphysema of the previous case. Furthermore, this case showed a heart pushed to the right, that is, in the direction of the atelectatic lung, in contrast with the heart pushed to the opposite side in the previous case of emphysema.

**Endoscopy:** A piece of peanut was found in the right bronchus *below* the orifice of the *middle* lobe bronchus, thus explaining why *only* the *lower* lobe showed atelectasis. The foreign body was removed.

**Case 9**.—Mrs. W. B., aged fifty-three. About two months before, she had had a profuse hemorrhage from the bowel. Since that time she had awakened at four or five o'clock every morning with a small amount of blood in her mouth.

**Examination:** As in the former case a thorough search was made for any possible bleeding point in the upper air or food passages. No such point could be found. Roentgen examination was negative. There was no visible bleeding source anywhere in the bronchial tree.

In the esophagus about 32 cm. from the upper teeth there was a somewhat superficial erosion at the right side, posteriorly. While this might have been a pre-existing ulceration, it is also possible that it may have been a transitory change due to slight trauma. It was cauterized with silver nitrate, and there was no more bleeding. Nevertheless, I suspect that she was probably regurgitating blood from the stomach, although *post hoc propter hoc* reasoning would indicate the erosion was the cause and the cauterization the cure.

**Case 10**.—J. W., aged eleven, stated that four days previously while eating popcorn he began to laugh and then to cough. A slight cough persisted. This was his only symptom. The temperature had been normal and there were no physical signs in the chest.

**Roentgenology:** The plates of the chest were negative and because of this it was felt that there was probably no disturbance in the lung. However, the roentgenologist did find a pendulum or side-to-side motion of the heart on inspiration and expiration, under the fluoroscope. During inspiration the heart appeared to move toward the right as though more air were *entering* the left lung than the right. During expiration more air seemed to *leave* the left lung than the right and the heart, therefore, tended to swing to the left. An obstruction in the right bronchus could account for such a motion, and with only this evidence and the symptoms



Fig. 13. Case 11. Open safety pin in esophagus. Removal by version.



Fig. 14. Case 12. Open safety-pin in esophagus. Removal by point-sheathing method.

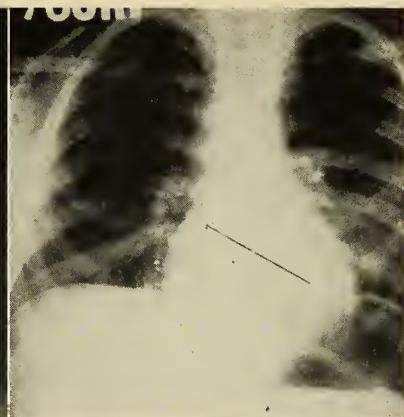


Fig. 15. Case 13. Emphysema of entire right lung due to peanut in right main bronchus, above superior lobe orifice.

of a mild cough in addition to his history, bronchoscopy was advised.

**Endoscopy:** In the right main bronchus, approximately at the level of the opening for the middle lobe, there was found a piece of popcorn. This was removed and the child went on to recovery.

**Comment.**—This case is cited chiefly to show the value of a history in conjunction with the pendulum motion of the heart.

**Case 11.**—M. B., aged fourteen months, swallowed an open safety-pin.

**Röntgenology:** The pointed end of the pin lay *transversely* in the cricoid constriction of the esophagus.

**Endoscopy:** Of the several methods commonly employed in the removal of open safety-pins I usually prefer the point-sheathing procedure, whereby the distal end of the esophagoscope is manipulated to a position directly above the sharp point of the pin. The latter is then drawn into the tube, and without releasing the firm grasp on the pin, pin and tube are removed together. The rounded lock or fastener end of the pin usually slides easily along the esophageal wall. Occasionally, it is better to do a version and turn the pin, if possible, so that the looped or apical end presents, after which removal is simple. This procedure was adopted in the present instance.

**Case 12.**—D. B., aged twenty-two months, was brought in with the history that the child had put an open safety-pin into its mouth and the excited mother had put her finger into the child's mouth and, feeling something sharp, she pushed it down into the esophagus. This was unfortunate, because it could probably have been removed with very little trouble from the pharynx by using a pair of forceps.

**Röntgenology:** The pin lay in the coronal plane in the upper part of the esophagus just at or beneath the cricoid constriction; the open end of the pin was, as usual, up.

**Endoscopy:** This case differs from the safety-pin case just cited, in that the technique for removal is limited

to either closing the pin *in situ* or removing it by the point-sheathing method previously described. Version is out of the question because the length of the pin is greater than the width of this infant's esophagus. The point of the pin was therefore freed from the esophageal rugae and was then drawn into the tube, whereupon the tube and pin were removed together.

**Case 13.**—T. O., aged five, at 6:30 p.m. while eating peanuts, began to cough violently. Respiration became difficult and he was brought into the hospital.

**Röntgenology:** Two hours later x-ray pictures showed mild but distinct emphysema of the entire right lung, especially on expiration. The fact that the *entire* lung was involved suggested at once that any foreign body present would have to be in the entrance to the right main bronchus, that is, *above* the opening of the *superior lobe* bronchus. This is in contrast with another case herein cited, wherein there was emphysema of the *lower* and *middle* lobes only, since the peanut was lodged in the right main bronchus *below* the orifice of the *superior lobe* bronchus but above the opening of the bronchus to the *middle lobe*.

**Endoscopy:** A high degree of inflammation and edema of the subglottic and tracheal tissues was found. This extended into both main bronchi and was undoubtedly due to the irritating effect of the half of a peanut which was found in the opening of the right main bronchus. This form of inflammation is sometimes known as arachidic tracheobronchitis and is said to be due to arachidic acid which is found in certain foods, such as peanuts. It is interesting to note what a difference there is in the reaction of different individuals to the same irritant. I have known a number of children who have harbored a piece of peanut in a bronchus for weeks with practically no symptoms, while the present patient developed a very severe reaction within two hours. Sometimes tracheotomy is necessary, but in this instance we were able to do without it.

**Case 14.**—Mr. F. D., aged thirty-seven. This was a case of extraordinary interest. The patient had a ton-

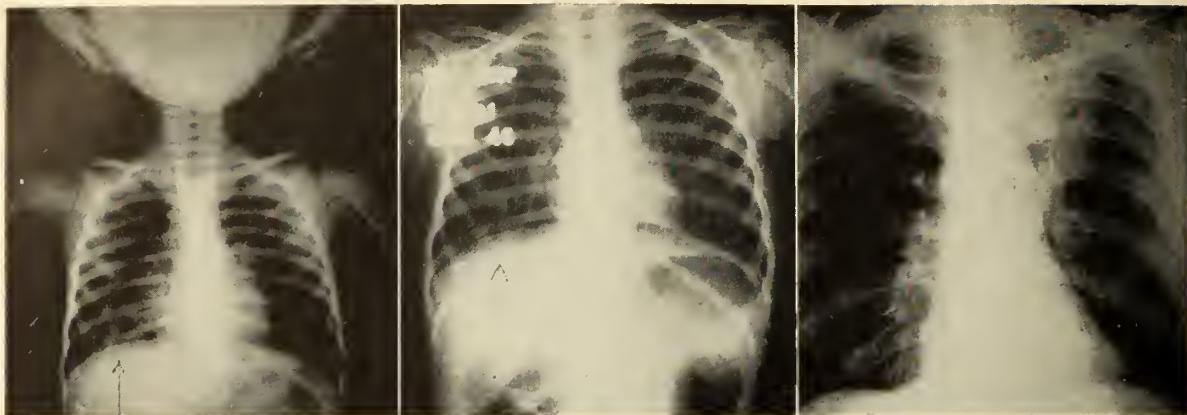


Fig. 16. Case 15. Right basal pneumonitis, due to peanut in right bronchus. Not a true pneumonia.

Fig. 17. Case 15. Three days after removal of peanut.

Fig. 18. Case 16. Atelectasis, left upper lobe. Aspiration of bronchial pus.

tonsillectomy three weeks prior to the time that I first saw him. About two weeks afterward he began to have nausea and dysphagia and the difficulty in swallowing had been increasing to the point that for several days he had been unable to take anything at all by mouth. When I saw him he was irrational and weak almost to the point of complete exhaustion. About a week before he had had a high fever for three or four days, but now his temperature was normal, as were also his laboratory studies. The breathing was stertorous and labored and he was markedly cyanotic.

**Roentgenology:** All x-rays were negative.

**Endoscopy:** With considerable difficulty because of a violent gag reflex, the pharynx and larynx were examined and no abscess or other inflammation secondary to the tonsillectomy, was present. There was, however, a paralysis of the left vocal cord and paresis of the right, which accounted for his dyspnea and cyanosis. Several able consultants had agreed that an esophagoscopy should be attempted, if possible, to determine the cause of dysphagia. Before this could be done the patient's already labored breathing stopped entirely. After considerable difficulty the respiration was re-established and tracheotomy was done. The breathing immediately became free, because the paralyzed vocal cords were no longer a problem. The general exhaustion, however, was so severe that the patient, who had become fairly clear mentally after the tracheotomy, became again irrational and, after ten hours, expired.

The autopsy failed to disclose a single positive gross fact with regard to the diagnosis. There was nothing in the pharynx, larynx or mediastinum to account for the vocal cord paralysis nor for the inability to swallow. The chest was negative. Because of these facts we suspected that a central lesion might be at fault. Section of the medulla showed no gross lesions, but microscopic study finally confirmed our suspicion of acute polioencephalitis.

**Case 15.**—J. I., aged twenty months, had been eating peanuts three days previously when she began to laugh, then to cough, and had coughed almost constantly since. There was much wheezing, difficult respiration and a

temperature of 105. A definitely diminished percussion note was made out over the right chest.

**Roentgenology:** X-rays showed basal pneumonitis in the right side with patchy bronchopneumonia. However, this must be properly interpreted as an inflammation due to an irritating foreign body, and not as an ordinary pneumonia.

**Endoscopy:** There was a high degree of inflammation of the arachidic type involving the mucosa of the entire respiratory tract. A large piece of peanut was found firmly embedded in the upper part of the right main bronchus. This was removed, following which the child made an uncomplicated recovery.

**Case 16.**—S. K., aged fifty, had had a cough and a temperature for six weeks.

**Roentgenology:** The left upper lobe showed atypical cloudiness, possibly unresolved pneumonia or abscess or perhaps even foreign body in the left bronchus.

**Endoscopy:** No tumors nor foreign bodies were found, but at the junction of the left upper lobe and main bronchi there was an area of marked inflammation with pus. The latter was removed by suction, and the condition gradually cleared up.

**Case 17.**—E. A., aged twenty-six, stated that a few minutes before coming for examination she had put an ordinary straight pin in her mouth and had swallowed it. There was pain in the throat at and below the level of the larynx. Thorough search with the laryngeal mirror in the hypopharynx and larynx revealed no foreign body, but because of persistent severe pain the next day she was sent to the hospital.

**Roentgenology:** A distinct linear but somewhat irregular shadow appears in the anterior wall of the esophagus at the cricoid level. This does not, however, resemble a pin and may be seen on close inspection to be only the lateral or end view of a thin, prematurely calcified layer on the posterior surface of the cricoid cartilage. This appearance might be deceptive in a casual inspection of the plate. The entire alimentary tract was x-rayed and no pin was seen.

**Endoscopy:** was not done, despite the fact that the



Fig. 19. Case 17. Calcified posterior surface of cricoid cartilage. History of swallowing pin. No foreign body.

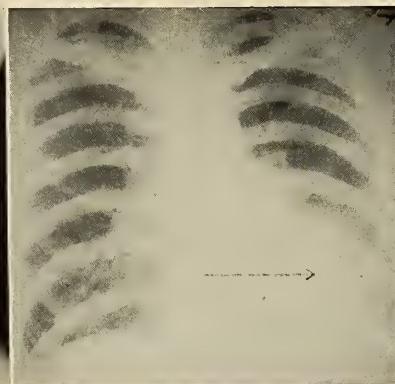


Fig. 20. Case 18. Left lower lobar pneumonia, recurrent, due to an inflammatory mass in bronchus.

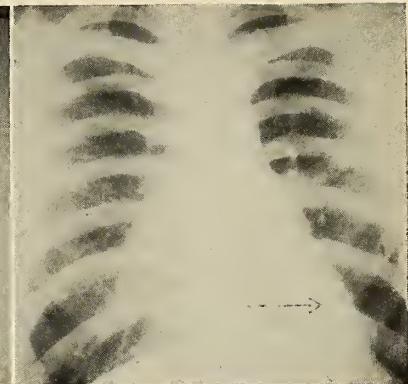


Fig. 21. Case 18. Several months after removal of tumor. No evidence of pathologic change in left lower lobe.

patient continued her complaint during the next forty-eight hours. After a few days she recovered without any interference whatever, confirming our suspicion that no foreign body at all had been swallowed. In other words, her history was completely misleading.

*Case 18.*—M. L., aged thirty-one, a young farmer, had had six attacks of pneumonia within two years, always in the left lower lobe. Between these illnesses he was perfectly well.

*Roentgenology:* Characteristic pictures of pneumonia were found with each attack, whereas the plates were entirely clear during the intervals between them.

*Endoscopy:* Near the lower end of the left main bronchus, i. e., in the lower lobe bronchus, a red, glistening, soft mass was found. This was attached to the bronchial wall and practically filled the lumen. From the fact that it was pedunculated we thought that it might have

been a papilloma. However, biopsy showed chronic inflammatory and granulation tissue so that we had to conclude that this was a post-inflammatory mass of granulation tissue which probably followed his first attack or perhaps some earlier disturbance in the chest, and, because of interference with the ventilation of the lower lobe, caused repeated attacks of inflammation in this area.

The foregoing reports illustrate not only the desirability, but the necessity, of correlating the history, clinical findings, roentgen studies and, if necessary, endoscopic procedures in cases presenting disturbances in the bronchi and the esophagus. Only in this way is it possible to give the patient an accurate diagnosis and prompt relief from his trouble.

## LABORATORY AIDS IN THE EARLY RECOGNITION OF LIVER DISEASE

F. W. HOFFBAUER, M.D.

Department of Medicine, University of Minnesota  
Minneapolis, Minnesota

THE early recognition of liver disease by means of physical findings alone is often difficult. The presence of jaundice or the presence of hepatic enlargement or tenderness at once attract the attention of the examiner. Frequently, however, these are evidences of advanced liver disease. It is naturally desirable to recognize such disorders in the incipient state. As in other branches of medicine, laboratory procedures have been found to be useful aids in the evaluation of liver disease. Despite the readily admitted limitation of these procedures it is felt that they may serve as val-

uable adjuncts to clinical experience, especially in the following respects:

### Early Recognition of Liver Disease

Infectious hepatitis is characterized by a definite prodromal stage in the majority of cases. According to the observations of Barker, Capps, and Allen<sup>1</sup>, the onset of symptoms preceded the appearance of jaundice by from one to three weeks in one half of their cases. A certain number of cases failed to develop jaundice although in all other respects the clinical picture was the same ("acute hepatitis without jaundice"). The impor-

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tance of early recognition and early treatment in hepatitis is stressed by these observers.

Cirrhosis of the liver undoubtedly exists in a latent or subclinical form for some time before jaundice or ascites appear. Modern nutritional therapy appears to offer some hope of arrest of the condition. Obviously if the disorder could be recognized early, better results from therapy should follow.

### Objective Measurements During Therapy

Experience has demonstrated that too early resumption of activity in patients recovering from hepatitis may result in relapse and prolonged disability.<sup>1</sup> Physical means alone are frequently inadequate to detect residual liver damage in the convalescent state. Suitable liver function tests, employed serially may, however, serve as one method of determining the presence of a still active disease process.

Although a number of laboratory procedures designed to reflect functional impairment of the liver have been proposed, no one of them has proved adequate in all situations. This is understandable when one considers the many physiological functions of this organ and its great reserve power. The necessity of performing multiple tests on a single patient is becoming increasingly apparent. In an attempt to devise a suitable combination of laboratory tests, studies have been under way at the University of Minnesota Hospitals under the direction of Dr. C. J. Watson. Various series, some of which have been published<sup>9,17,18</sup>, have been employed. The present discussion will be limited to the application of such procedures to the patient without obvious jaundice.

For laboratory tests to be useful in clinical work certain standards must be met. They should be simple to perform, entail no risk and little inconvenience to the patient, and be generally available. For the purpose of detecting liver damage or to assess the degree of liver damage present once the diagnosis is established, four laboratory tests are recommended. Performance of all four is advisable because of the recognized limitations and variabilities of each. The following are suggested:

1. Measurement of serum bilirubin level.
2. Detection of abnormalities of the serum proteins.
3. Detection of urobilinogen in the urine.
4. Measurement of bromsulphthalein excretion.

1. *Serum Bilirubin.*—The virtue of this determination in the apparently nonjaundiced patient is the recognition of latent icterus. The normal individual seldom exceeds a level of 1.0 mg. per 100 c.c. for the total serum bilirubin. The exact level that must be reached in the serum before jaundice becomes apparent clinically is difficult to state. It is difficult to recognize jaundice under the most favorable circumstances if the level of the serum bilirubin is below 2 mg. per 100 c.c. Modern laboratory methods employing the photoelectric colorimeter permit precise determination of the serum bilirubin. The method of Malloy and Evelyn<sup>12</sup> is particularly useful since it permits quantitative estimation of the Van den Bergh reaction. A knowledge of what portion of the total bilirubin reacts promptly to the diazo dye and what portion is of the indirect reacting variety is of considerable value. A slight modification of the Malloy-Evelyn technique by Ducci and Watson<sup>2</sup> permits the distinction of the two types of pigment in a quantitative manner. A measurement of the prompt direct component is obtained by a reading taken one minute after the Van den Bergh reagent is added to the serum sample. The total serum bilirubin, including both direct and indirect reacting fractions, is determined after alcohol has been added to the serum and sufficient time (fifteen minutes) has elapsed to bring out the maximum color.

Watson<sup>19</sup> has found that the level of the prompt direct bilirubin (one-minute reading) seldom exceeds 0.2 mg. per 100 c.c. in the normal. Values in excess of this probably denote regurgitation of bilirubin that has been acted upon by the liver cell. In pure retention jaundice, as encountered in some hemolytic states, the value of the total bilirubin may be decidedly elevated but the one minute fraction scarcely altered. Such a finding immediately directs attention to the true nature of the underlying pathology.

The icteric index, although furnishing a little less information than the quantitative Van den Bergh reaction, has definite value in the recognition of latent jaundice. Though this is only a means of measuring the yellow color of the serum, it reflects increases in the total serum bilirubin quite faithfully. Values for the icteric index greater than 8 to 10 units denote abnormal increase. Care must be taken not to confuse carotinemia with true increases of bilirubin. Carotin in the serum, by virtue of its yellow color, pro-

duces a false elevation of the icteric index, a disadvantage not found with the quantitative Van den Bergh reaction. The substance can be readily detected, however, by simple extraction of the serum with petroleum ether. Bilirubin will not enter the ether layer whereas carotin is soluble and will readily enter it.

A simple expedient, too seldom employed in a search for evidence of liver disease, is the examination of the urine for bilirubin. The renal threshold for this pigment is not definitely known. The presence of bilirubin in the urine is in all probability related to regurgitation jaundice, i.e., to increases in the direct reacting component of the serum bilirubin. As is well known, bilirubinuria is not a feature of retention jaundice, hence the term "acholuric" often applied to such disorders. Neefe and his coworkers<sup>15</sup> in a study of hepatitis, have shown that serial examination of urine specimens for bilirubin can be employed to detect hepatic dysfunction in a very early stage of the disease. Similar observations have been reported by Gellis and Stokes<sup>4</sup> and by others.<sup>1</sup> Though the method employed, the methylene blue test, has aroused some controversy<sup>3,5</sup>, the value of testing the urine for bilirubin is unquestioned. Of the many methods available for this purpose, Harrison's spot test<sup>7</sup> is as sensitive and useful as any. This has been still further simplified by Hawkinson, Watson and Turner.<sup>8</sup>

**2. Detection of Abnormalities of Serum Proteins.**—Recently two laboratory procedures have become available that assist materially in detecting the presence of liver disease. The cephalin-cholesterol flocculation test of Hanger<sup>6</sup> is already well known and has been widely employed. MacLagan<sup>11</sup> has described a somewhat similar procedure known as the thymol turbidity test. Strictly speaking, these are not tests of liver function but rather furnish evidence of liver cell irritation. They probably depend upon the alterations in the plasma proteins that occur as a result of parenchymal liver disease. Hence positive results are to be expected in cirrhosis and in hepatitis, and negative results in jaundice due to extrahepatic obstruction. They have a place in the recognition of liver disease and also are of some value in differential diagnosis.

The flocculation test of Hanger consists of the addition of a small amount of serum diluted with saline to a colloidal suspension of cephalin-

cholesterol complex. Readings are taken at twenty-four and forty-eight hours and the degree of flocculation recorded in terms of one to four plus. The test, although simple, requires meticulous preparation of the reagents if false positive reactions are to be avoided. The mechanism of the test, i.e., the alterations in the plasma protein responsible for the flocculation, have been recently described by Moore and his associates.<sup>14</sup>

The thymol turbidity test is performed by adding a small amount of serum diluted with saline to a buffered solution of thymol. The resulting turbidity is compared with the standards used in the Kingsbury method<sup>10</sup> of determining urine protein. The reading is made at the end of thirty minutes, an obvious time advantage over the cephalin-cholesterol test. Values are recorded in arbitrary units related to the degree of turbidity. Normal sera does not exceed a value of 4 and pathological values may range as high as 30. According to MacLagan<sup>11</sup> a high percentage of cases of hepatitis and cirrhosis give abnormal readings whereas cases of extra-hepatic biliary obstruction usually give negative values. Evidence suggests that the test is chemically related to the cephalin-cholesterol test and indicates alterations of the plasma protein, especially an increase in the gamma globulin fraction. Comparative data as to the relative value of the thymol turbidity test and the cephalin-cholesterol test soon to be published<sup>20</sup> reveal that the two are in quite close but not complete agreement. The two tests are not identical. The serum of normal dogs, in fact of all animals, uniformly yields a strongly positive cephalin-cholesterol test. I have not obtained a positive thymol turbidity test with any dog sera, even though the animals had severe liver damage as a result of carbon tetrachloride administration.

**3. Detection of Urobilinogen in the Urine.**—Urobilinogen is formed in the bowel. It results from the reduction of bilirubin by anaerobic bacteria in the colon. A portion of the urobilinogen so formed is reabsorbed into the portal circulation and carried to the liver. The exact fate of this chromogen is not known, but it would appear that the normal liver removes it. In the presence of liver disease large amounts of urobilinogen may appear in the urine. Even slight disturbances of liver function may result in the occurrence of urobilinogenuria. Therefore the dem-

onstration of this substance in abnormal amounts in the urine is an indication of liver cell dysfunction.

Urobilinogen is a colorless substance. It can be detected by the pink to red color that results when Ehrlich's reagent (paradimethyl-amino benzaldehyde in HCl) is added to the urine. The addition of sodium acetate intensifies the color in a true reaction and helps to eliminate false positive tests. Normal urine will seldom give a positive Ehrlich test. Therefore, the employment of even the qualitative Ehrlich test is of some value in the search for evidence of liver disease. The value is enhanced if tests are made on urine samples secured at different times of the day or preferably over a period of several days.

The method of Watson<sup>16</sup>, that of collecting all of the urine for twenty-four hours and extracting an aliquot, has been widely employed to determine the quantitative excretion of urobilinogen. The normal individual does not exceed 3 mg. per twenty-four hours by this method but pathological values may range as high as 50 to 100 mg. The method, although not technically difficult, is somewhat time consuming. A simple means of expressing the Ehrlich reaction in a quantitative fashion would therefore render the urine urobilinogen test more generally available.

Such a test has been recently devised by Watson and his associates.<sup>21</sup> This procedure, although less precise than the extraction method, is sufficiently accurate for clinical purposes. The urine specimen is collected for a two-hour period, between 2 p.m. and 4 p.m. Experience has shown that excretion of urobilinogen is usually maximum in the afternoon. The color intensity of the Ehrlich reaction is compared in a simple comparator block against a series of standard tubes. The value is expressed in terms of so-called Ehrlich units. One such unit is approximately equivalent to one milligram of urobilinogen. On the basis of observations made on a series of normals, a value of greater than 1 or 1.2 Ehrlich units for the 2 to 4 p.m. period can be considered abnormal.

The method is recommended for serial study in patients suspected of liver disease. Collection should be made on three successive days since there is considerable day-to-day variation.

**4. Measurement of Bromosulphthalein Excretion.**—The clinical value of this test has been amply demonstrated in the years that it has been employed. The chief disadvantage is that it is of

little value in the presence of regurgitation jaundice. One hesitates to employ the test if the icteric index is greater than 20 or the serum bilirubin greater than 2.0 mg. per 100 c.c. The dosage of 5 mg. per kilo of body weight is recommended and the clearance time taken as 45 minutes. As shown by Mateer and his coworkers<sup>13</sup> the normal individual will show no retention of the dye in the blood stream after 45 minutes. For clinical purposes the test is probably the most reliable laboratory aid available to measure liver function in the individual without jaundice.

### Conclusions

The employment of four laboratory procedures is recommended in the search for evidence of liver disease in the patient without apparent jaundice. Since no clinical laboratory test is infallible and since those concerned with functions of the liver are subject to considerable variation, multiple tests are needed. The procedures as described can be carried out with a minimum of discomfort to the patient. Laboratory tests cannot be more than aids to the clinician. They do not make diagnoses. If properly employed, though, they can be extremely useful in detecting certain disorders early and in following their progression or regression.

### Bibliography

1. Barker, M. H., Capps, R. B., and Allen, F. M.: Acute infectious hepatitis in the Mediterranean theater, J.A.M.A., 128:997-1002, (Aug. 4) 1945.
2. Ducci, H., and Watson, C. J.: The quantitative determination of the serum bilirubin with special reference to the prompt reacting and the chloroform-soluble types. J. Lab. & Clin. Med., 30:293-300, (April) 1945.
3. Figge, F. H. J.: The green color of a methylene blue-bilirubin mixture. J.A.M.A., 128:613-614, (June 23) 1945.
4. Gellis, S. S., and Stokes, J., Jr.: The methylene blue test in infectious (epidemic) hepatitis. J.A.M.A., 128:782-783, (July 14) 1945.
5. Gellis, S. S., Neefe, J. R., Reinhold, J. G., and Stokes, J., Jr.: Methylene blue test for bilirubin in the urine. J.A.M.A., 128:826, (July 14) 1945.
6. Hanger, F. M.: Serological differentiation of obstructive from hepatogenous jaundice by flocculation of cephalin-cholesterol emulsions. J. Clin. Investig., 18:261-271, (Mar.) 1939.
7. Harrison, G. A.; cited by Lichtman, S. S.: Diseases of the liver, gall bladder and bile ducts. p. 285, Philadelphia: Lea and Febiger, 1942.
8. Hawkinson, V., Watson, C. J., and Turner, R. H.: A modification of Harrison's test for bilirubin in urine especially suited for mass and serial usage, J.A.M.A., (in press) 1945.
9. Hoffbauer, F. W., Evans, G. T., and Watson, C. J.: Cirrhosis of the liver: with particular reference to correlation of composite liver function studies with liver biopsy. Med. Clin. N. Amer., pp. 363-388, (March) 1945.
10. Kingsbury, F. B., Clark, C. P., Williams, G., and Post, A. L.: The rapid determination of albumin in urine. J. Lab. & Clin. Med., 11:981-989, (July) 1926.
11. MacLagan, N. F.: The thymol turbidity test as an indicator of liver dysfunction. Brit. J. Exper. Path., 25:234-241, (Dec.) 1944.
12. Malloy, H. T., and Evelyn, K. A.: The determination of bilirubin with the photo-electric colorimeter. J. Biol. Chem., 119:481-490, (July) 1937.
13. Mateer, J. G., Baltz, J. I., Marion, D. F., and MacMillan, J. M.: Liver function tests: A general evaluation of liver function tests, and an appraisal of the comparative sensitivity and reliability of the newer tests with particular emphasis on the cephalin-cholesterol flocculation test, the intravenous hippuric acid test and an improved bromosul-

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- phthalein test with a new normal standard. J.A.M.A., 121: 723-728, (March 6) 1943.
14. Moore, D. B., Pierson, P. S., Hanger, F. M., and Moore, P. H.: Mechanism of the positive cephalin-cholesterol flocculation reaction in hepatitis. J. Clin. Investig., 24:292-295, (May) 1945.
  15. Neefe, J. R., Stokes, J., Jr., Reinhold, J. G., and Lukens, E. D. W.: Hepatitis due to the injection of homologous blood products in human volunteers. J. Clin. Investig., 23:836-855, (Sept.) 1944.
  16. Watson, C. J.: Concerning Urobilinogen: I. An improved method for the quantitative estimation of urobilinogen in urine and feces. Am. J. Clin. Path., 6:458-473, (Sept.) 1936.
  17. Watson, C. J.: Cirrhosis of the liver: Clinical aspects with particular reference to liver function tests. Am. J. Clin. Path., 14:129-137, (Mar.) 1944.
  18. Watson, C. J.: Studies of liver disease with correlation of clinical features and liver function tests. Wisconsin M. J., 43:1003-1007, (Oct.) 1944.
  19. Watson, C. J.: Some newer concepts of the natural derivatives of hemoglobin. Blood, (in press).
  20. Watson, C. J., and Rappaport, E. M.: A comparison of the results obtained with the Hanger cephalin-cholesterol flocculation test and the Maclagan thymol turbidity test in patients with liver disease. J. Lab. & Clin. Med., (in press).
  21. Watson, C. J., Schwartz, S., Sborov, V., and Bertie, E.: Studies of urobilinogen V. A simple method for the quantitative recording of the Ehrlich reaction as carried out with urine and feces. Am. J. Clin. Path., 14:605-615, (Dec.) 1944.

## COMPLICATIONS OF PNEUMONIA

JOHN FRANCIS BRIGGS, M.D.

Clinical Assistant in Medicine

University of Minnesota

Saint Paul, Minnesota

HERE are a goodly number of complications that may occur in pneumonia, and in general these complications can affect any organ or group of organs within the body. There are, as far as I know, no complications that are characteristic or pathognomonic of either the atypical or the typical forms of pneumonia. The mucous membrane and skin can be affected in the form of herpes labialis or toxic rashes, or there may be a rash due to the profuse perspiration that often occurs during pneumonic infections. To these disturbances of the skin may be added those that occur secondarily to the use of the sulfonamides, the specific sera, or to the antibiotics such as penicillin. In the more severe forms of the pneumonic infections, purpura and metastatic abscesses of the skin sometimes occur.

The gastro-intestinal system is affected in many ways. Nausea, vomiting and anorexia are not uncommon. Occasionally a parotitis is present. Acute dilatation of the stomach has been known to occur and distention and ileus are not uncommon in the severer types of the infection. Pneumococcic peritonitis when present can only be diagnosed positively by aspiration of the peritoneal cavity and the demonstration of the causative organism in the peritoneal exudate. Jaundice indicates either a severe toxic form of hepatitis or it may represent an actual viral or bacterial invasion of the liver. In either instance the presence of jaundice suggests the need of a liver-protective diet which is high in carbohydrate, high in protein and low in fat. In addition, amino-acids should be given. The parenteral use of insulin and vitamins aid in the recovery of the patient. Bowel

disturbances, of course, are not infrequent during the severe stages of the illness.

The osseous system is seldom involved in pneumonia. Arthritis may follow a pneumococcic infection, and in the atypical forms of pneumonia the severe paroxysms of coughing sometimes cause rib fractures.

The genito-urinary system shows very few complications as a result of pneumonia. There may be an orchitis. Acute nephritis is seldom seen, but cystitis may occur as may also pyelitis or pyelonephritis. Hematuria and resulting renal failure from anuria may complicate the pneumonia. This usually occurs as the result of toxic reactions from the sulfa drugs or as the result of post transfusion reaction if incompatible blood was used for a transfusion.

The central nervous system is frequently affected by the pneumococcic infection. During the severe stages of the illness, the patient may exhibit delirium, mania, and great psychomotor activity. Unconsciousness and stupor sometimes ensue. Delirium tremens is not infrequent in the alcoholic who has pneumonia. Meningismus may be present, and meningitis when it does occur has the usual symptoms of meningitis due to any other type of organism. The diagnosis of meningitis is established by lumbar puncture and the demonstration of the pneumococcic organism in the spinal fluid. Encephalitis can complicate either the typical or atypical forms of pneumonic infection, but seems to be commoner in the atypical type of the disease. Pneumococcic abscess of the brain is possible from an extension of a pneumococcic-otitic infection or as the result of a

pneumococcic sinusitis. Peripheral neuritis although uncommon may complicate pneumonia.

There are a great number of complications that occur in the cardiovascular system. If there is a direct extension of the infection to the pericardium, pericarditis results which is either fibrinous or exudative. If fibrinous, a friction rub is usually heard, and if exudative, the friction rub disappears and the signs of pericardial effusion are present. The effusion may be either serous or purulent or any combination of exudates. If the fluid is sufficiently great in amount, a cardiac tamponade results. This tamponade can be relieved by aspiration of the pericardial sac, and if suppuration is present, surgical drainage of the sac may be indicated. The diagnosis of pericarditis is facilitated by the use of the electrocardiograph and by repeated x-ray examination of the chest. Myocarditis is not common in pneumonia, but it sometimes occurs. This may be the result of toxic changes within the heart muscle or it can be caused by direct extension of the infection into the myocardium. Sometimes myocarditis is caused by a toxic reaction from the sulfonamide drugs that may have been used in the treatment of the pneumonic infection. An endocarditis, when present, may be of two types; it may be either bacterial or it may represent a rheumatic endocarditis. If it is the rheumatic type, the endocarditis is usually not recognized until some months after the acute infection has subsided when signs of rheumatic valvulitis, characterized by typical murmurs, may appear for the first time in the heart. A bacterial endocarditis evidences itself by a clinical picture of septic temperature, petechiae, changing heart murmurs, and the presence of a positive blood culture. Congestive heart failure when it is present is recognized by the increase of venous pressure, and it should be treated by the use of digitalis. Circulatory collapse occurs in pneumonia and is recognized by the signs of peripheral circulatory collapse. Auricular fibrillation may be present during the acute infection. This condition indicates the need of digitalis and quinidine in appropriate therapeutic doses. Occasionally, particularly in the atypical forms of pneumonia, an acute cor pulmonale develops. This complication is recognized by the signs of right heart failure and also by specific changes in the electrocardiograms as well as changes that occur in the pulmonary conus on x-ray examination of the heart. Various degrees of manifestations of phlebitis may be present dur-

ing the infection. An arteritis, associated occasionally with thrombosis of the arteries, is sometimes seen.

The respiratory system being the prime organ affected in pneumonia has, of course, a great number of complications. These vary from sinusitis and otitis media, pharyngitis, tonsillitis to laryngitis. Asthmatic seizures may occur during the acute phase of the infection, and in some instances these seizures of asthma may occur for the first time during an acute pneumonic disease and persist as asthmatic bronchitis or bronchial asthma for years following the original infection. Bronchitis is present with the pneumonic process, and it, too, may continue after the acute infection has subsided. Bronchiectasis can occur as a result of a primary pneumonic infection. In severe infections the lung may be the seat of abscess formation or even gangrene. Delayed resolution of the pneumonia is frequently seen in the atypical forms of the disease. It may be stated, however, that unresolved pneumonia is a rare complication. Most instances of so-called unresolved pneumonia will resolve their diagnosis into either empyema, encapsulated effusion, bronchiectasis, atelectasis, bronchial obstruction with suppuration, tumors within the lung, carcinoma of the lung, tuberculosis, or even foreign bodies in the bronchus. Atelectasis is common during the acute phase of pneumonic infection, and in the atypical types of pneumonia, thromboses of the pulmonary arteries and arterioles may be seen. Hemorrhages with hemoptysis, clinically, often occur during pneumonia. This is particularly true in the atypical forms. Emphysema may follow pneumonia.

Almost all pneumonic infections have an associated pleuritis which can be either fibrinous or exudative. The fibrinous type is characterized by the presence of pain on respiration and a friction rub is usually heard on examination. This pain can be controlled by immobilizing the chest and by the use of opiates. In the exudative type of pleuritis the fluid may be either serous, purulent or hemorrhagic. Aspiration of the pleural cavity should be done to establish the type and character of the fluid present. Sufficient fluid should be removed for diagnostic study and for both animal and bacterial study. In the serous effusions further aspiration is not indicated unless there is respiratory embarrassment. The purulent effusions and empyemas may be treated by surgical drainage which may be either closed or open. The local use of penicillin within the empyema

cavity and the parenteral use of sulfonamides and penicillin is believed by some authorities to be efficacious in the treatment of empyema. In general, however, it may be stated that with an empyema, surgical consultation is indicated. If the empyema is neglected, an empyema necessitans may occur, or the empyema may rupture into the lung and thus into a bronchus producing a pleural-broncho-fistula. When this is associated with air within the pleural cavity, we may have a pyopneumothorax in conjunction with the pleural bronchial fistula. The empyema may rupture through the skin to the outside. Spontaneous pneumothorax is sometimes present as a complication of pneumonia.

Mediastinitis is difficult to diagnose, as is also mediastinal empyema.

In conclusion, it may be emphasized that a large number of complications occur during the course of a pneumonic infection and that these complications may affect any organ or group of organs within the body. There are, apparently, no characteristic complications to indicate whether the disease is the typical or the atypical type of pneumonia. The complications that occur are due either to toxic changes or to direct extension of the infection or they are the result of a metastatic extension of the infection. Since a great number of these complications are amenable to either chemotherapy, serum therapy, surgical therapy or antibiotic therapy, it is necessary that we be on constant alert during any pneumonic process to recognize early the presence of a complicating disease so that the proper therapy may be instituted.

## TOTAL EXCISION OF THE PATELLA FOR ARTHRITIS OF THE KNEE

H. HERMAN YOUNG, M.D. and JOSEPH M. REGAN, M.D.

Rochester, Minnesota

DURING recent years considerable interest has been manifested in a relatively insignificant bone—the patella. Although Putz, of Strasbourg, according to Albert practiced complete excision of the patella as far back as 1860 and concluded that the bone was not essential for normal gait, there were few followers of his teaching. Only occasionally did reports of complete extirpation of this bone appear in the literature, and even then the operation was advocated for only such lesions as tuberculosis, osteomyelitis or tumor. Modern interest in the subject began in 1936 and 1937 with the investigations of Blodgett and Fairchild and of Brooke<sup>4,5</sup> on the effect of partial and total removal of the patella for fracture of this bone. Since that time, at least twenty articles have been written on the subject and most of the reports have dealt with the treatment of fractures of the patella by either partial or total excision of this bone.

Considerable difference of opinion exists regarding the importance of the patella. Brooke concluded that the presence of the bone was due to phylogeny alone and that it neither arises as

a response to a functional need nor serves a useful purpose when formed. To substantiate his argument, he drew attention to the field of comparative anatomy and pointed out that moles and the slowly moving sloth have well developed patellas while the kangaroo, which has enormous quadriceps power, has no patella at all. His study of ten cases in which total patellar excision was performed revealed no loss of power in the knee, and a study of fresh anatomic specimens revealed that the speed of extension and flexion apparently was enhanced by excision of the patella. This view of the relative unimportance of the patella is not shared by everyone. Herzmark, Thomson and other authors have expressed the opinion that the patella not only serves a useful purpose in protecting the femoral condyles against trauma, particularly when the knee is flexed, but also enhances quadriceps power by decreasing friction and by keeping the quadriceps tendon well in front of the axis of flexion and extension of the knee. They concluded, therefore, that partial excision when feasible is preferable to total excision of the bone.

The present study of results obtained by total excision of the patella for arthritis of the knee joint was stimulated by Berkheiser's report on the

From the Section on Orthopedic Surgery, Mayo Clinic, (Young and the Mayo Foundation, (Regan, Fellow in Orthopedic Surgery), Rochester, Minnesota.

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Fig. 1. Anteroposterior and lateral roentgenograms of right knee of patient forty-eight years of age who had bilateral osteoarthritis of the knees. Patellofemoral type of arthritis and a posterior loose body are evident.

Fig. 2. Anteroposterior and lateral roentgenograms of same knee as that represented in Figure 1. One year after operation, showing patella and loose body excised.



Fig. 3. Range of motion in right knee of same patient as that represented in Figures 1 and 2. Twenty-two months after operation.

same subject in 1939 and by the scarcity of similar reports in the literature. Tippett in 1938 advocated excision of the patella in cases of osteoarthritis. In personal communications to Berkheiser, both Lambrinudi and Britain stated that their results with this operation have been good. Lambrinudi had performed the operation in five cases and Britain had performed it in ten cases. Britain said that the procedure was of value only in the patella-femoral type of arthritis.

Berkheiser reported eleven cases in which patellectomy was performed for arthritis of the knee. He said, and it should be restated, that the operation is not a cure for arthritis but is a means of overcoming a mechanical impediment to function. The operation is done to relieve pain and

improve function, not to procure a perfect knee. At the time of operation, Berkheiser noted the presence of hypertrophic synovitis, obliteration of the suprapatellar pouches, osteophytic overgrowths on the femoral condyles and tibial tubercles, loose degenerating cartilage and pannus formation. All of these changes likewise were noted in our series of cases. He limited his operation to simple excision of the patella and did nothing about the changes that were present in adjacent anatomic structures. We occasionally performed cheilotomy or removed loose bodies in cases of osteo-arthritis and performed synovectomy in several cases of rheumatoid arthritis. We believed that such procedures might improve the final result. Berkheiser obtained good results in eight cases and fair results in three cases. In one of the three cases in which the results were classified as fair, the operation had been performed shortly before the publication of Berkheiser's report and it was difficult to evaluate the final result. In another case, psychosis developed after the operation had been performed. Berkheiser concluded that the operation is of definite value as it decreased the pain and improved the function of the knee in all of the eleven cases.

Our report is based on twenty-one cases of arthritis of the knee in which excision of the patella was performed at the Mayo Clinic. In fourteen of the cases, the patients had osteoarthritis of the knee and there was moderate or severe involvement of the patella. In six cases, the arthritis was of the rheumatoid type. In the remaining case, traumatic arthritis had followed



Fig. 4. *a*, Anteroposterior and, *b*, lateral roentgenograms of right knee; *c*, anteroposterior and, *d*, lateral roentgenograms of left knee. Patient was fifty-six years of age and had bilateral osteo-arthritis.

recurrent dislocation of the patella. The ages of the patients ranged from eighteen to sixty-six years; the average age was forty-seven years. Fifteen of the patients were women and six were men. Figures 1 to 9, with their various parts, represent some of the situations encountered.

Both of the patellas were excised in five of the cases. In three of the five cases, the arthritis was of the osteoarthritic type; in the two remaining cases, it was of rheumatoid type.

All of the patients complained of varying degrees of pain in the knee when they attempted to use it in walking and even when it was moved while no weight was being borne upon it. Sixteen of the patients had flexion deformities of the involved knee and only three patients of the entire group had normal motion before operation. The remaining two patients had complete extension but limited flexion of the involved knee. Flexion deformities ranged from 10 to 45 degrees.

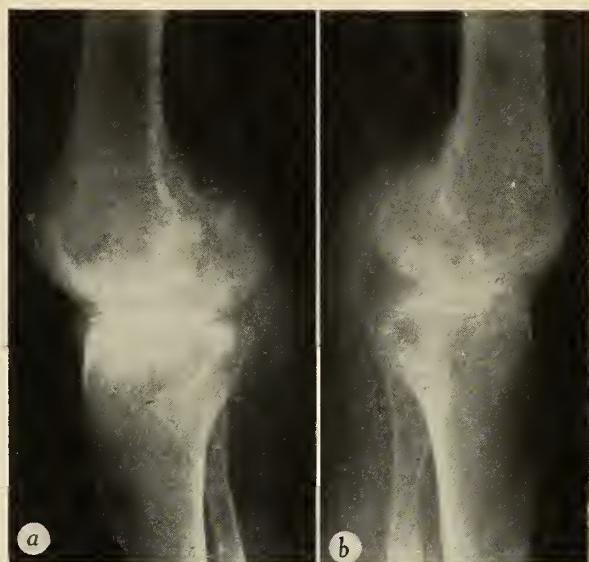


Fig. 5. Lateral postoperative roentgenograms of *a*, right and *b*, left knees of patient represented in Figure 4. Patellae excised.

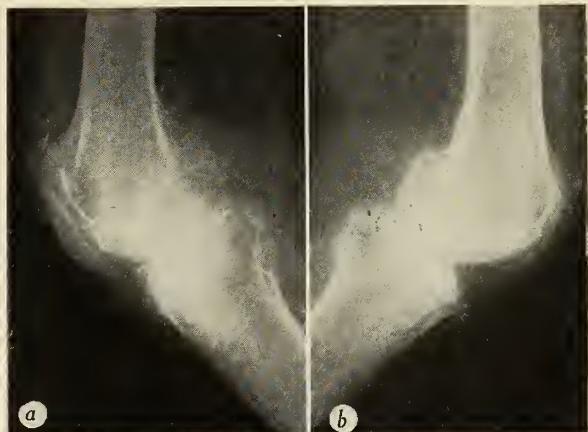


Fig. 6. *a*, Right and, *b*, left knees of patient represented in Figures 4 and 5. Roentgenograms taken two and a half years after operation, showing regeneration of right patella. Excellent clinical result. Range of motion 170 degrees to 60 degrees. "Was a complete cripple and now almost 100 per cent normal."

The excision of the patella was accomplished in each case either through a vertical or parapatellar incision and care was taken to suture the reflected portions of the patellar tendon with either chromic catgut or silk sutures after the enucleation of the patella. Postoperative immobilization in extension was maintained for seven to ten days by means of a plaster cast. At the end of this period, physiotherapy was started. In some cases, motion was regained early, while in others, several months were required for the return of motion.

## EXCISION OF THE PATELLA—YOUNG AND REGAN

It is difficult to evaluate the end results of any treatment of arthritis and it is particularly mal before operation and a perfect joint cannot be secured. Likewise, the disease is not eliminat-



Fig. 7. Anteroposterior and lateral roentgenograms of patient thirty-three years of age, who had osteo-arthritis of left knee. Patella excised with complete relief of pain and range of motion 175 degrees to full flexion.

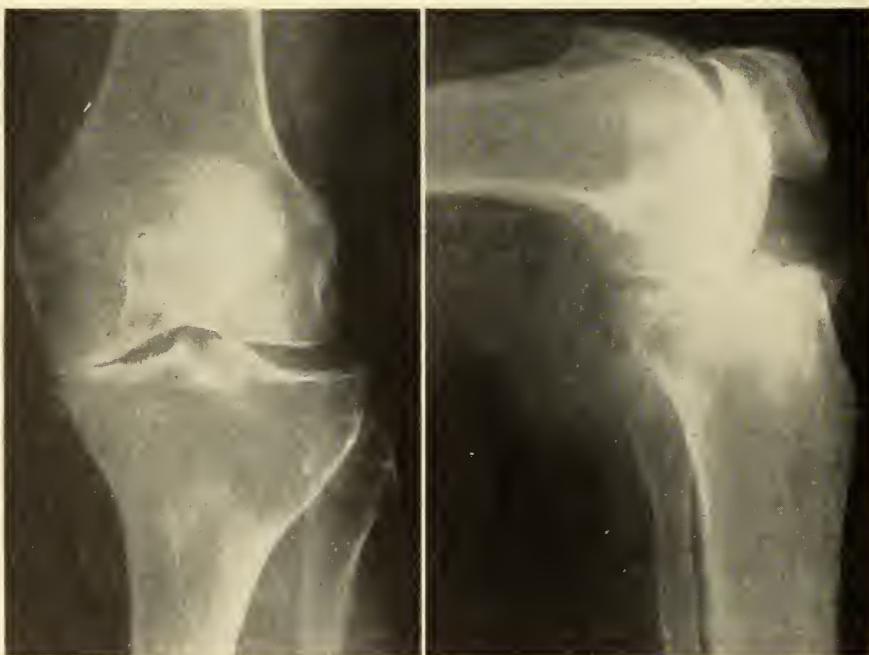


Fig. 8. Anteroposterior and lateral roentgenograms showing posttraumatic arthritis of left knee with flexion deformity. Patient was sixty-two years of age. Patella and semilunar cartilage excised and cheliotomy performed. Complete relief of pain for two and a half years and range of motion 180 to 90 degrees.

difficult to evaluate the end results of the surgical treatment of this disease. The joints are not nor-

ed by operation and the type and extent of involvement vary in each case. What we hope

for is relief of pain with re-establishment of a useful range of motion and correction of deformity. With these objectives in mind, each patient must be considered separately and the result evaluated accordingly.

In seven of the fourteen cases of osteo-arthritis, the results were excellent. The patients do not have any pain in the involved knee. They are able to extend the leg to an angle of at least 170 degrees and to flex it to an angle of at least 90 degrees. One of the patients, who previously was a complete cripple, reported that she now is "almost 100 per cent normal." One patient is able to bowl "without ill-effect." Another patient, who formerly had to use crutches, now is walking normally. A bilateral operation was performed in two of the seven cases in which the results were classified as excellent. In another of these cases, the operation recently has been performed on the other knee. As the patient in this case had not been dismissed from the hospital when this paper was written, the results of the second operation could not be evaluated. In still another case, the patient now is contemplating having the operation performed on her other knee.

In the remaining seven cases of osteo-arthritis, the results were classified as follows: good in four cases, fair in two cases and poor in one case. In the cases in which the results were classified as good, the pain was relieved but there still was some limitation of motion. In the cases in which the results were classified as fair, the pain was relieved completely or almost completely but the range of motion in the affected joint was only a few degrees. In the case in which the results were poor, a painful genu varum developed as a result of a destructive process in the medial tuberosity of the tibia. This process was believed to be due to a neurotrophic disturbance.

In nine of the fourteen cases of osteo-arthritis, the pain was relieved completely. In four of the five remaining cases, the severity of the pain is much less than it was before the operation. In all of the fourteen cases, follow-up data have been obtained for from one to four years after the operation.

In the cases of rheumatoid arthritis the results were difficult to evaluate. It is well known that it is difficult to improve this condition by surgical treatment. In four of the six cases of rheumatoid arthritis, follow-up data were obtained for

from two and a half to four years after the operation. In all of the four cases the patients now have less pain than they had before the operation and all have said that they have been benefited accordingly.

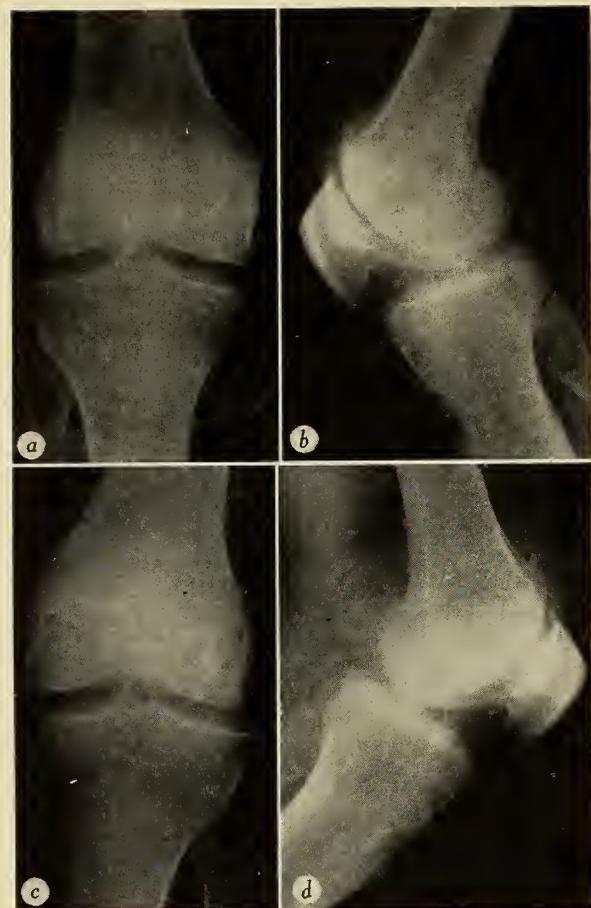


Fig. 9. *a*, Anteroposterior and, *b*, lateral roentgenograms of right knee; *c*, anteroposterior and, *d*, lateral roentgenograms of left knee. Patient was twenty-four years of age and had bilateral osteo-arthritis of knees. Before operation pain so severe he had to stop working. Patellae excised and loose bodies removed. Able to return to work. Range of motion 170 to 70 degrees. "Able to bowl without ill effects."

fited by the operation. In three of these cases, synovectomy also was performed; in the remaining case, a capsulotomy also was performed with the patellectomy. The results were good in three of the four cases and fair in the remaining case. In this case, the severity of the pain decreased after the operation but the patient believes that the arthritis has progressed and limited the motion of the affected joint.

Good results were obtained in the one case of traumatic arthritis. The severity of the pain was decreased and normal motion was obtained in the affected joint.

In combining all groups only one patient stated that he had not been helped by operation. All but one of the twenty-one patients said that they had less pain after operation while nine said that they had no pain at all.

### Summary

This paper is based on twenty-one cases of arthritis of the knee in which patellectomy was performed. Both of the patellas were excised in five of the cases. In all of the cases, follow-up data were obtained for from one to four years after operation. The pain was completely relieved in nine cases and partially relieved in eleven cases.

In cases of osteo-arthritis, the result was better than it was in cases of rheumatoid arthritis.

### References

- Albert, S. M.: Excision of the patella; preliminary report. J. Iowa M. Soc., 33:184-187, (Apr.) 1943.
- Berkheiser, E. J.: Excision of the patella in arthritis of the knee joint. J.A.M.A., 113:2303-2307, (Dec. 23) 1939.
- Blodgett, W. E., and Fairchild, R. D.: Fractures of the patella; results of total and partial excisions of the patella for acute fracture. J.A.M.A., 106:2121-2125, (June 20) 1936.
- Brooke, R.: The effect of removal of the patella for simple transverse fractures on the function of the knee joint. Proc. Roy. Soc. Med., 30:203-207, (Jan.) 1937.
- Brooke, R.: The treatment of fractured patella by excision. A study of morphology and function. Brit. J. Surg., 24:733-747, (Apr.) 1937.
- Herzmark, M. H.: Quoted by Thomson, J. E. M.
- Thomson, J. E. M.: Fracture of the patella treated by removal of the loose fragments and plastic repair of the tendon; a study of 554 cases. Surg., Gynec. & Obst., 74: 860-866, (Apr.) 1942.
- Tippett, G. O.: Treatment of fractures of the patella by excision. Brit. M. J., 1:383-384, (Feb. 19) 1938.

### A SUMMARY OF THE NEURO-SURGICAL CASES TREATED IN A U. S. ARMY GENERAL HOSPITAL

MAJOR WALLACE P. RITCHIE, MC, AUS  
Saint Paul, Minnesota

MAJOR LYLE A. FRENCH, MC, AUS  
and

CAPTAIN LEONARD A. TITRUD, MC, AUS  
Minneapolis, Minnesota

**T**HIS paper is presented to demonstrate some of the work carried out by the Neuro-Surgical Service of a United States Army General Hospital over a period of six months.

The circumstances in which a general hospital functions are so varied that the experiences of one such hospital may be entirely different from those encountered by another. Procedures satisfactory for one such hospital may not be efficacious for another. Many factors aside from the actual surgical condition will determine the type of treatment that should be carried out in the separate installations. For instance, a general hospital operating at a peak load, with early arrival of their cases and rapid evacuation would not by right do peripheral nerve surgery. On the other hand a general hospital in the rear, where evacuees might arrive two to three weeks after injury and where evacuation was slow might justifiably perform some selected operations of this type.

Although this particular hospital was the first general hospital in the line of evacuation, it was at no time less than 150 miles behind the front

lines. Its line of evacuation was by ambulance, air, water and rail. Only a small percentage of wounded were admitted under twenty-four hours after injury and all battle casualties had passed through an evacuation hospital. The evacuation time from the hospital varied, but after the peak of the fighting it was sometimes three weeks before patients could be evacuated to the rear, where they passed through one or more installations before being evacuated to the zone of the interior.

During the six months of operation the Neuro-Surgical Section of the Surgical Service examined either on their own service or in consultation approximately 577 cases. These cases were classified for the most part into three groups:

- |  |     |
|--|-----|
| 1. Injuries and diseases of the brain.....                   | 167 |
| 2. Injuries and diseases of the spinal cord and column ..... | 194 |
| 3. Injuries and diseases of the peripheral nerves... .       | 216 |
| Total....  | 577 |

### Injuries and Diseases of the Brain

One hundred and sixty-seven patients were admitted to the Neuro-Surgical Service because of traumatic and nontraumatic cerebral condi-

The material for this article was encountered during the first six months of operations in 1943.

tions. Of this group, 160 had received some sort of head trauma; sixty-nine having been injured by metallic fragments or the concussion of shell, bomb, land mine, or grenade explosions; fifty-six had been in motor vehicle accidents; and the remaining thirty-five had been injured in some other manner. All of these 160 patients had suffered sufficient trauma to have definite cerebral concussion. Ninety-seven of these 160 patients had cerebral concussion without the presence of any form of intracranial hematoma, hemorrhage, or skull fracture. The time interval between the receipt of the injury and admission to this general hospital varied between one and eighty-seven days with an average of eighteen days. Only twenty patients of this group were admitted for treatment within five days of their injury. Therefore, in most instances, the acute phase of the cerebral concussion had subsided upon arrival at this hospital.

The treatment administered was generally symptomatic after careful examinations had been made to eliminate any surgical condition such as an intracranial hematoma. These patients were allowed up out of bed and engaged in various forms of mental and physical exercise just as soon as this was tolerable. A vigorous effort was always made to prevent these persons who had complaints of persistent headaches, dizziness and fatigue from becoming chronic bed patients and invalids. These individuals, as well as those having skull fractures, were frequently out of bed and working about the wards within one or two weeks after their injuries providing such activity did not aggravate their symptoms. The average stay in the hospital for the simple cerebral concussion cases was twenty days per patient; and for various individuals, ranged from one day to as long as 120 days. Forty-one of this group of ninety-seven patients were ultimately returned to full duty. It was necessary to reclassify and discharge twelve individuals to limited duty because of the persistence of physical or mental sequelae. Nineteen patients were returned to Army hospitals in the United States as unfit for overseas military service. The remaining twenty-five were evacuated to rear hospitals to secure further treatment and reclassification.

**Skull Fractures.**—Included within the group of 160 traumatic cases, were fifty-six having skull fractures in addition to cerebral concussion. For-

ty-two of these fifty-six had either simple or compound skull fractures, but no foreign bodies. Of the remaining fourteen cases, two had skull fractures and also subdural hematoma. One had a skull fracture with meningitis. Ten of these patients had skull fractures and intracranial foreign bodies, three of them also having brain abscesses. The time interval between the receipt of the injury and admission to this hospital varied from one to fifty-nine days, the average being fifteen days.

Of the total number of fifty-six skull fracture cases, twenty-seven had compound fractures; and six had compound, depressed fractures. Twenty-four of these fifty-six casualties were operated upon in order to debride the wound, elevate depressed fractures, and secure, if possible, a primary closure of the scalp. Nineteen of this group of twenty-four individuals had been operated upon prior to admittance to this hospital, which evidences that an early emergency procedure had been accomplished near the site of the accident. Two others were operated upon only at this hospital, and the remaining four individuals had operations performed prior to arrival and also at this hospital.

The average time of hospitalization in these fifty-six cases was twenty days and varied from being discharged on the day of arrival to remaining as long as eighty-five days. The disposition rendered in these fifty-six individuals resulted in twelve soldiers returning to full military duty, six returning to limited duty in the theater of operations, seventeen going back to the United States for prolonged treatment, and evacuating eighteen to rear hospitals for longer care and further disposition. Three individuals died.

**Intracranial Foreign Bodies.**—Another subgroup of the traumatic cases included those who had intracranial foreign bodies. There were ten such patients having shell fragments located intracerebrally. (These have been grouped with those having skull fractures.) These casualties arrived for treatment at this hospital on the average of twelve days following injury. Six had been operated upon prior to arrival with removal of the foreign bodies and debridement of the wounds. Three were operated prior to admission and also at this hospital. The foreign bodies were removed if they produced, or were likely to pro-

duce, irritative cerebral phenomena, provided the operative approach would not traverse an infected field.

One of these patients was assigned to limited duty, seven were returned to the United States for prolonged care, and one died. The single unoperative soldier was also returned to the United States as unfit for military duty. The average period of hospitalization in this hospital was thirty-three days.

*Brain Abscesses.*—Three individuals in the group of traumatic cases had brain abscesses, in addition to severe cerebral concussion and compound skull fracture. These three were operated prior to admission, and also at the general hospital. Three abscesses had developed about pieces of intracerebral shell fragments and loose skull bone fragments. In two cases the abscesses containing foreign bodies were removed from the cerebrum in toto. In a third patient the abscess was aspirated, and a debridement of the necrotic part of a fungus cerebri done. In all these cases, a drain was left in the abscess space from forty-eight to seventy-two hours. Two of these patients improved markedly and were sent to military hospitals in the United States for further treatment and disposition. The third soldier who had suffered a severe head injury developed fungus cerebri followed by hemolytic streptococcus and staphylococcus meningitis and broncho-pneumonia. This patient died twenty-two days after the receipt of injury. Additionally, another patient who developed type nine pneumococcal meningitis following a simple, incomplete right temporal skull fracture recovered completely following sulfadiazine therapy.

*Intracranial Hemorrhage.*—Nine cases were classified as having some form of intracranial hemorrhage. One of these had a skull fracture complicated by an extradural hemorrhage which was surgically evacuated at another hospital. He was ultimately returned to limited military duty. Another individual suffered a skull fracture and a diffuse subdural hemorrhage. He was operated upon and the hematoma removed, but after remaining unconscious for five days following the accident, he died. One patient developed an intracerebral hematoma without having had a head injury. Ventriculography aided the localization of this mass, and after craniotomy with evacuation of the hematoma, this patient improved and

was sent back to the United States. There was one patient who suffered a head injury without skull fracture and then developed a subdural hematoma. Following operation at this hospital, he improved and was returned to the United States for further care. Another patient had a severe cerebral concussion and skull fracture. He was unconscious until death thirteen hours after admission to this hospital. No operation was performed, the hematoma being found at autopsy. In this group of nine, there were additionally four cases of suspected subdural hematomas, one having a skull fracture, and three having had head injuries without fracture. Three of these individuals were returned to hospitals in the United States, and the fourth was evacuated to a rear hospital.

*Brain Tumor.*—In addition to the traumatic cases thus far discussed, nine patients were studied for the presence of suspected brain tumor in this hospital. Two were operated upon here. One had a cerebellar medulloblastoma excised and made an excellent recovery. He was returned to a military hospital in the United States for further care. Another had a large cerebral astrocytoma which was partially excised and a temporal decompression done. This patient was essentially unchanged post-operatively and was evacuated for further future treatment. Because of intracranial pressure symptoms threatening the lives of these two persons, the operations were performed only as emergency measures in this combat theater. One ventriculogram and two encephalograms performed upon three other individuals of this group were negative in localizing brain tumors. All of these patients were eventually evacuated or sent back to Army hospitals in the United States for more prolonged and extensive study for the presence of cerebral neoplasma.

#### **Injuries and Diseases of the Spinal Cord and Spinal Column**

One hundred and ninety-four patients were examined in whom there was a possible lesion of the spinal cord or spinal column. The Orthopedic Service referred for consultation all of their patients who had the slightest question of spinal cord or nerve root involvement. Thus, fifty-nine of these ultimately were diagnosed lumbosacral disease and in twenty-three no neurological disease could be demonstrated.

In the remaining 113 cases, the diagnoses were as follows:

Prolapsed nucleus pulposus.....	33
Cases with some neurological signs suggestive, but not conclusive of a prolapsed nucleus pulposus.....	21
Gunshot wounds with nerve root involvement.....	13
Closed wounds of the spinal cord.....	4
Fractures and dislocations.....	21
Miscellaneous .....	21

*Prolapsed Nucleus Pulposus.*—Although no definite figures are available, it is estimated that the thirty-three cases diagnosed "prolapsed nucleus pulposus" were between 3.5 and 4.7 per cent of the total number of cases presenting back complaints examined in this hospital.

Laminectomies were performed in ten of these patients. In six of the ten, a prolapsed nucleus pulposus was found. In the remaining four patients a hypertrophic eminence was found on the posterior lip of the body of the vertebra in one patient. One patient presented a soft disc between the eighth cervical and first thoracic vertebrae which did not protrude at the time of the operation. In a third patient a large varicosity of the spinal veins was demonstrated. In the fourth, the exploration was negative.

Of the ten patients operated upon, seven had satisfactory results as far as relief of pain was concerned. One of the patients had no relief of pain after the removal of a large disc from between the fifth lumbar vertebra and the first sacral vertebra and it was concluded that he had another disc at the next higher level which was not explored at operation. A second patient had some persistent pain following operation which was undoubtedly due to operative trauma of the nerve root. The third patient who did not have satisfactory relief was reoperated upon, and marked arachnoiditis was demonstrated.

Only three of the seven patients who had satisfactory results were returned to duty. Of the twenty-three patients in whom a definite diagnosis of prolapsed nucleus pulposus was made, but without operative confirmation, and of the twenty-one patients in whom there was suggestive, but not conclusive evidence, only thirteen were returned to duty. Twenty-nine of these forty-four patients were evacuated to the zone of interior and twelve were evacuated to the rear pending a disposition.

This experience confirms the knowledge that

the soldier with a prolapsed intervertebral disc is a poor risk as far as foreign service is concerned. It also leads to the conclusion that only those exceptional patients who have sufficient pain to make transportation difficult should be operated upon in the combat theater.

*Gunshot Wounds of the Back with Spinal Cord or Column Injury.*—Thirteen cases of gunshot wound of the back with spinal column injury were treated. Six of these showed direct involvement of the cord; two showed evidence of contusion of the cord; three presented evidence of root pain without cord involvement and in two there were compound fractures of the vertebra without cord involvement. Only one of these patients was seen under forty-five hours following injury. The others were first observed from thirteen to thirty-one days after injury.

In this group laminectomies were performed by us in three instances. In one case a laminectomy had been performed previous to admission to this hospital.

No deaths occurred in this group, but the results were uniformly poor in those cases with paralysis, even after the removal of foreign bodies and bone fragments from the spinal cord.

Where bladder paralysis was present a suprapubic cystostomy was done in all cases except one, in which tidal irrigation, was instituted.

There were two cases of cerebrospinal fluid fistulae. Both closed spontaneously. Meningitis developed in one. This was controlled by sulfadiazine.

Only one of this group of thirteen cases returned to duty. The remainder were reclassified and returned to the United States or evacuated to the rear before final recommendation for disposition could be made.

*Miscellaneous Cases.*—The twenty-one miscellaneous cases were diagnosed as follows:

Old tuberculosis of spine with root pain.....	1
Myositis .....	2
Residual of old poliomyelitis.....	3
Residual of an old hematomyelia.....	1
Residual of a prolapsed nucleus pulposus (OP 1937) ..	1
Arachniditis .....	2
Multiple sclerosis .....	2
Friedreich's ataxia .....	2
Ill-defined condition .....	3
Epiphysitis .....	3
Infectious myelitis .....	1

## Injuries and Diseases of the Peripheral Nerves

Included in this report on peripheral nerve injuries are only those cases in which the nerve lesion was definite. All questionable cases were omitted. There were 249 peripheral nerve lesions that occurred in 216 patients. In thirty-three patients, more than one nerve was involved. The preponderance of injuries occurred to nerves located in the upper extremities. In patients in whom more than one nerve was involved, the ulnar and median nerves were most commonly injured. The site of injury in these cases was the upper arm where the ulnar and median nerves are proximal anatomically.

Clinically, there was complete loss of function in the majority (59 per cent) of nerve lesions when examined at the time of admission. The average length of time between the injury and admission to the hospital was twenty-six days. The majority of lesions that showed return of function during their stay in the hospital began to have signs of return either at the time of admission or within two weeks thereafter. Nerve function was determined by repeated examination of both superficial sensation and muscle power. Stimulation with faradic and galvanic electrical current was also used.

The problem of treatment of nerve injuries was difficult. It was realized that the sooner after an injury a nerve repair was performed the better the result. However, it was also necessary to consider that the majority of those patients with injuries to major nerves would eventually be returned to the zone of interior and that the person who directs the rehabilitation should perform or attend the operation. The position of our hospital was such that the majority of the patients were not seen until three weeks following the injury. The policy adopted was that if the wound of a patient permitted an operation within three weeks of admission the nerve was repaired at this station, since it was estimated that it would be six to eight weeks longer if operation were deferred until he had reached the zone of interior.

The average length of time between admission to the hospital and operation was sixteen days. This figure is deceptive in that the range extended from two to seventy-eight days.

In one patient a nerve exploration was performed three weeks following the injury. The nerve and surrounding tissues were soft and edematous. In this patient a longer interval

should have elapsed prior to operation so that the tissue reaction could have subsided.

Surgical procedures were performed on the peripheral nerves of forty-seven patients (19 per cent). There were fourteen formal nerve sutures, two nerve grafts, twenty-three neurolysis with or without nerve transplantation, three in which foreign bodies were removed from within the nerve sheath, three in which a Hershage procedure was done, and two neurectomies. Injuries of the brachial plexus were not operated upon because it was believed that in order to determine the status of the injury a prolonged period of observation was necessary.

*Formal Nerve Suture.*—At the time of operation all the exposed nerves were stimulated with faradic current. Gross appearances were deceiving in regard to electrical conductivity. Those nerves that were completely severed or contained a neuroma that encompassed the entire nerve obviously did not conduct a stimulus across the injured area. There was another group, however, in which the nerves had the appearance of having undergone secondary changes following a concussion or contusion. These were firm and cordlike, thinner than normal, with a pearly white color. This group usually did not conduct a faradic electrical stimulus. In those nerves that did not transmit a stimulus and in which the involved area was localized sufficiently to permit section and suture of the nerve without a graft, a section and formal nerve suture was performed.

Suture material consisted of either fine black silk or human hair. At first blonde hair was used since presumably it created less tissue reaction but because of the technical difficulties of visualizing it against the background of vital tissues it was necessary to change to brunette hair. We found this material very satisfactory.

An attempt was always made to relieve tension on a suture line by gaining length from flexion or extension of the appropriate joint. If sufficient length were not obtainable by this procedure a neurolysis with or without a nerve transplant was performed.

*Nerve Graft.*—In two patients nerve grafts were performed. One graft was placed in a defect in the radial nerve. The ninth intercostal

nerve was used as the donor and three cables, 6.5 cms. long, were sutured into the defect. Another nerve graft was placed into a defect in the peroneal nerve. The posterior cutaneous nerve of the thigh was used as the donor and three cables, 9 cms. long, were sutured into the defect. The grafts were sutured with fine black silk or human hair.

*Neurolysis and Harsage.*—Neurolyses were performed on those nerves in which there was a partial block of nerve impulses or irritation of the nerve from constricting scar tissue. The nerves were transplanted when necessary to obtain an adequate bed.

Harsage procedures were performed on three nerves that were found to be firm and thinned out over a distance exceeding 4 cms. and in which intraneuronal fibrosis seemed to be constricting the neurofibrils. The value of this procedure is open to debate. No concrete deductions as to its value were obtained.

*Intraneuronal Foreign Bodies.*—Small metallic foreign bodies were removed from within the epineurial sheath in three nerves. Each of these patients experienced severe pain locally and over the sensory distribution of the nerve when pressure was applied to the skin over the foreign body. There were small areas of tissue reaction around the foreign bodies, but they were not excised for fear of injuring more neurofibrils. It was felt that these areas of reaction would subside after removal of the inciting factor.

*Neurectomies.*—In one patient the medial cutaneous nerve to the forearm was cut for relief of severe pain over its distribution. The nerve had been injured by shell fragments four months previously. The neurectomy relieved the pain. In another patient the ninth and tenth intercostal nerves were severed for relief of segmental pain. Following this, there was anesthesia over the previously painful area but the patient then experienced marked hyperesthesia over the eleventh intercostal nerve. This nerve was injected with 95 per cent alcohol and relief was obtained.

*Procedures Performed Other Than on Peripheral Nerves.*—There were three patients with scalenus anticus syndromes upon whom the

scalene muscles were cut. Two obtained complete and one partial relief. All returned to duty.

There were four patients with true causalgia. Sympathetic nerve blocks with novocaine were performed on all four. Three of the four patients obtained temporary relief; the other obtained no relief. In two of those who obtained relief, preganglionic sympathectomy was performed. One obtained complete relief of all pain, and the other did not. However, it is doubtful that in this patient all the sympathetic fibers were severed since some vasospasm was still present in the affected hand postoperatively. In one patient, the lumbar sympathetic nerves were injected with 95 per cent alcohol. The pain was reduced about 60 to 70 per cent. In the fourth patient, a neurolysis was performed and relief from pain was obtained.

Following all operative procedures, motion in the involved part was begun as soon as wound healing permitted. If a splint were applied to maintain a fixed position following a nerve suture it was removed about the fourteenth postoperative day and physiotherapy begun. Very generous co-operation from the physiotherapy department was obtained. When the patients were unable to attend the clinic, the physiotherapist treated them in the ward.

Comment on the final result of these nerve lesions is impossible because of the inadequacy of the follow-up data. Therefore, this report includes only the number and type of nerve lesions and the therapy instituted and is to be considered only a preliminary report.

### Summary

1. The Neuro-Surgical Service examined 577 patients.
2. In this total there were 167 cases of injuries and diseases of the brain, 194 cases in which the spinal cord or spinal column was affected, and 216 cases in which there was a peripheral nerve injury or disease.
3. There were seventy-three operations performed in this group, including ten cranial operations, sixteen operations on the spinal cord and spinal column, and forty-seven nerve operations.
4. The majority of patients observed had passed through one or more hospitals before admission.
5. Among the entire group of patients, three

(Continued on page 958)

# CLINICAL-PATHOLOGICAL CONFERENCE

## DIAGNOSTIC CASE REPORT

ARTHUR H. WELLS, M.D., and D. R. GOLDISH, M.D.  
Duluth, Minnesota

DR. A. H. WELLS: We are about to present a most remarkable diagnostic problem. Your attention to the details of the clinical presentation should lead you to the proper diagnosis.

DR. D. R. GOLDISH: A forty-one-year-old school teacher was first admitted to the hospital on February 28, 1945, approximately five months before her death, with a history of having had an almost continuous "cold" in the upper respiratory tract for a period of five months with a cough productive of thin whitish sputum. The onset was heralded by a sore throat lasting a few days. There had been some fullness in the chest, loss of appetite and strength, dyspnea on exertion, and she had lost 10 pounds in weight. However, she continued to teach school until the day of admission. The physical examination was not unusual, excepting for rather harsh breath sounds in both bases of the lungs. Her temperature tended to be slightly subnormal and the pulse ranged between 80 and 100 per minute. The white blood cell count ranged between 4,100 and 7,400 with approximately 70 per cent neutrophiles and 30 per cent lymphocytes. The hemoglobin was 12.5 grams, and the red blood cell count varied from 3,300,000 to 4,000,000. The red blood cell sedimentation rate was 30 mm. in 60 minutes by the Cutler method. An x-ray examination of the chest revealed a diffuse increase in the lung markings consistent with the diagnosis of bronchitis and possible pneumonia in the lower portion of the left lung. An x-ray examination also revealed what was considered right ethmoidal and maxillary sinusitis. Roentgenologic studies of the gall bladder, stomach, duodenum and colon were considered normal. An electrocardiogram was interpreted as diffuse myocardial disease, perhaps, right ventricular enlargement with an A V heart block, grade I. While in the hospital the patient was noted to have a marked dyspepsia and pain in the lower abdomen for several days, with considerable tenderness in the right lower quadrant. There was a history of tenderness in this area over a long period. A gradual improvement with penicillin and sulfadiazine therapy was noted. She regained a few pounds in weight but there was no return of vigor and energy. Her right lower quadrant complaints persisted, leading to an appendectomy on May 11, 1945. I explored the patient's abdomen throughout and found no significant changes besides those of the appendix. The histologic

study of the appendix revealed a rather extensive hyaline-like deposit in the connective tissues and particularly in the blood-vessel walls throughout much of the appendix. There was also a most unusual infiltration with clumps of remarkably large plasma cells particularly in the submucosa (Fig. 1). There followed an uneventful postoperative convalescence and the patient was discharged from the hospital after three weeks. She was readmitted on July 27, 1945, one week before her death. She was obviously in congestive heart failure and had a sudden onset of severe cyanosis and dyspnea shortly after admission. There was fluid in the right pleural cavity and cough productive of frothy, whitish sputum. There was also some edema of the ankles of three days' duration. Her blood pressure was 135/110. It had never been recorded elevated at any previous examination. The veins on her neck and arms were distended and there was a high venous pressure noted along with a marked cyanosis of the lips and fingers. Her entire face was unusually livid. Her heart was considered mildly enlarged on percussion. Diastolic sounds were loud over the whole precordium. There were no murmurs. Many extrasystoles were noted and the rate was 90 per minute. There was some shifting dullness in the flanks and generalized abdominal tenderness. The pitting ankle edema was considered a grade II in severity. An electrocardiogram (Fig. 2) led to the diagnosis of (1) right axis deviation; (2) indeterminate intraventricular block; (3) auricular ventricular heart block; (4) diffuse myocardial disease. An x-ray examination of the lungs revealed increased amount of infiltration in the lower portion of both lungs as compared with the previous admission. Her white blood cell count was 5,200, hemoglobin 11.5 grams, and red blood cell count 4,000,000. There were 76 per cent neutrophiles, 23 per cent lymphocytes and 1 per cent monocytes. The icterus index was 7. A urine analysis was essentially normal. Because of unusual childish activities and expressions she was seen by a psychiatrist (Dr. L. E. Schneider) who found that she had had a similar manifestation six years ago. Her sensorium was normal and she was emotionally depressed, rather childish and fearful of what her family thought of her. She showed no improvement with digitalis, oxygen therapy and other means of treating her obvious congestive heart failure. There developed a peculiar grayish-blue color of her face, especially of her lips, in spite of the oxygen therapy. The cyanosis appeared to be out of all proportion to the amount of dyspnea. There

From the Clinical-Pathological Laboratory of St. Luke's Hospital, Duluth, Minnesota, Arthur H. Wells, Pathologist.

was no orthopnea. Oxygen therapy did not affect the extreme cyanosis. She was very apprehensive during the last few days. Death occurred rather unexpectedly.

DR. A. H. WELLS: The case is now open for diagnoses.

PHYSICIANS: Metastatic malignancy in the lungs and on peritoneal surfaces. Pick's disease. Chronic pericarditis. Unresolved bronchopneumonia. Pulmonary tuberculosis with amyloid disease. Leukemia. Periarteritis nodosa. Multiple myeloma with widespread amyloidosis.

DR. A. H. WELLS: You have made several very excellent diagnoses. That of Dr. Hirschboeck's is correct. This forty-one-year-old woman died as the result of multiple myeloma with amyloidosis, of a type typical of this disease. The remarkable feature in this case is that the patient died of a typical chronic congestive heart failure as a result of extensive amyloid deposit in the myocardium. Postmortem bone-marrow studies from bodies of vertebrae, ribs and sternum all revealed approximately 75 per cent typical "myeloma cells." These were very suggestive of large plasma cells with frequently eccentric nuclei in which there were closely compact, deeply staining clumps of chromatin similar to the nucleus of an erythroblast. The cytoplasm frequently had a pale, perinuclear zone and the remainder of the moderately abundant cytoplasm was deep blue. Amyloid was found in the heart muscle, alveolar walls, bundles of smooth muscle, in the esophagus, stomach, and small and large intestines, periepithelial areas of the breast ducts, walls of small arteries and veins throughout much of the body, especially in the lungs, intestines and uterus, and to a lesser extent in connection with voluntary muscles including the tongue and rectus muscle, and in the malpighian bodies of the spleen and adrenals. The liver and kidneys had no amyloid. The amyloid deposits in different areas varied somewhat in the intensity of staining with the same and different stains. They stained uniformly well with azocarmine. However, congo red, iodine and sulphuric acid and methyl violet stained the hyaline-like substance rather poorly. Sudan III lightly stained isolated areas of amyloid in artery walls.

The deposits of amyloid in the heart muscle (Fig. 3) were of the greatest interest. There were frequent, fairly discrete foci of involvement of small size, so that in any low-power microscopic field one might expect to see about three such areas. The amyloid deposits were obviously immediately outside of the endothelial lining of the capillaries, especially in areas adjacent to arterioles. As the number of capillaries involved and the amount of amyloid deposits were increased in a given focus, there was a gradual atrophy of the muscle fibers in the center of the area to the degree of complete disappearance. This occurred as the result of interference with blood supply to the muscle. Occasionally small arterioles in the interstitial tissues had rather extensive deposits of amyloid in their walls with considerable reduction in the size of their lumina. Both types of deposit undoubtedly contributed to the injury of the

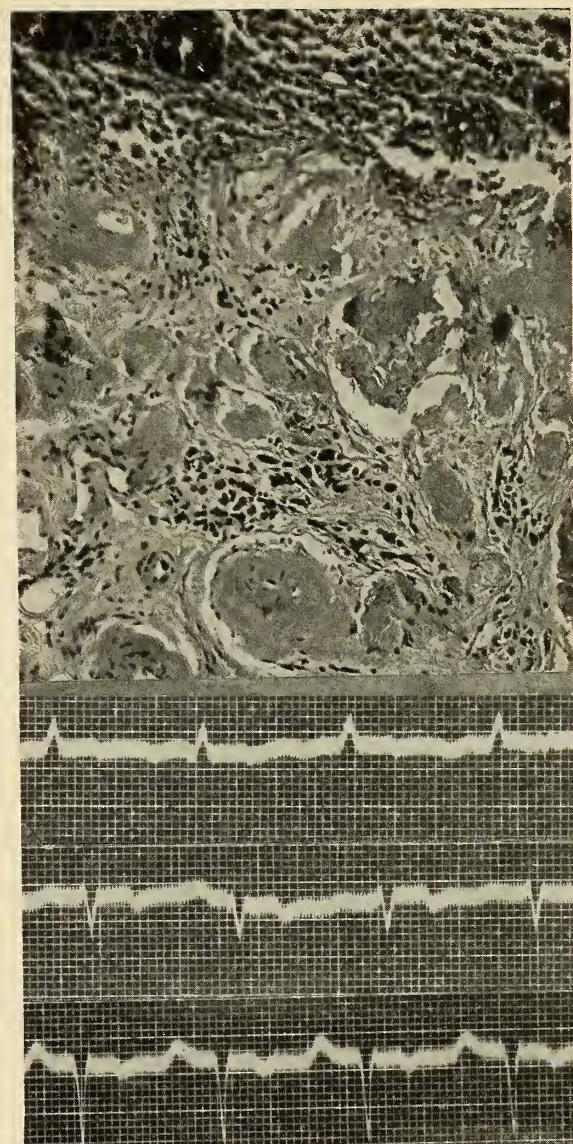


Fig. 1. Hyaline-like deposits in the submucosa of the appendix.  
Fig. 2. Leads 1, 2 and 3 of the electrocardiogram.

heart muscle. However, in this particular case the deposits about the capillary endothelium were the principal cause of the congestive heart failure. In the lungs (Fig. 4), there was an extensive amyloid deposit in patchy foci of alveolar walls. These areas were frequently associated with more extensive amyloid deposits in both arteries and veins of small size.

The evidences of chronic congestive heart failure found at the necropsy were those of general anasarca with bilateral hydrothorax, ascites and peripheral edema, chronic passive congestion of lungs, liver, spleen, small mural thrombi in both auricula, small recent hemorrhagic infarcts in the right lung and dilatation of the four cardiac cavities. The heart weighed 320 grams.

Dr. Hirschboeck, will you kindly tell us what led you to the proper diagnosis? We would appreciate any comments on the subject which you wish to make.



Fig. 3. A small focus of periendothelial amyloid deposit revealing atrophy of cardiac muscle near the center.

Fig. 4. The margin of a focus of amyloid deposit in alveolar walls.

### Discussion

DR. F. J. HIRSCHBOECK: The histologic description of the excised appendix with its extensive hyaline-like deposits in blood-vessel walls and in connective tissue associated with large plasma-like cells were a "dead give away."

Amyloidosis has been divided into four fairly distinct types. The first and most common of these is secondary amyloidosis. It is generally associated with chronic suppurative processes, notably chronic ulcerative tuberculosis of the lungs, osteomyelitis and chronic inflammatory disease in any part of the body. Chronic pyelonephritis, bronchiectasis, rheumatoid arthritis and abscesses in almost any tissue of the body as well as malignant processes in various locations have been described as the associated etiologic factor. The deposits

of this type of amyloidosis are found primarily in the spleen, liver, kidneys and adrenals. The second type, primary amyloidosis, is not associated with any disease or known etiologic factor. There were only twenty-four cases in the literature as late as 1939 as reviewed by Koletsky and Stecher.<sup>18</sup> Here the deposits of amyloid are frequently completely absent in the liver, spleen and kidney, but are found in the mesodermal tissues, notably in the smooth muscle bundles of the gastro-intestinal tract, the walls of blood vessels, striated muscle such as the heart, tongue and other voluntary muscles, bone, skin, nerves, joints and tendons. The amyloidosis occurring with multiple myeloma is a third group. This type closely resembles that of primary amyloidosis in its distribution. The fourth type takes the form of isolated tumor masses of amyloid occurring most frequently in the tongue, larynx, eye, bladder and bone. It is rare and generally occurs in association with multiple myeloma or may be of unknown etiology.

DR. V. KRUEGER: What is multiple myeloma?

DR. A. H. WELLS: My personal opinion of multiple myeloma is that it is a malignant process closely related to the other malignancies of bone marrow and lymphatic elements. It may have its origin from lymphocytes, erythroblasts or myeloblasts. It represents a more solid and fixed type of malignancy as compared to the leukemias. However, the myeloma cells may rarely occur in the peripheral blood in large numbers. Small clusters of the myeloma cells were found particularly along the intestinal tract in our present case. Ordinarily, however, the cells are limited to the bone marrow.

The diagnosis of amyloidosis should be suspected in those cases with a tuberculosis or other chronic suppurative process in which the liver becomes considerably swollen, the spleen enlarged and in which albumin appears in the urine in repeated tests. Under these circumstances Vennhold's congo red test<sup>18,33</sup> with an absorption of 90 per cent or more of the dye from the blood within one-half hour amounts to confirmatory evidence of amyloidosis. In many such cases a punch biopsy of the liver will give absolute evidence of amyloidosis.

The kidneys, adrenals, liver, and the intestinal tract may have their physiologic functions considerably altered by the deposits of amyloid. Deaths from uremia as the result of amyloidosis of the kidneys of tuberculous patients is rather common. The approximately chronologic order of appearance of manifestations of amyloidosis of the kidney are albuminuria, excretion of urinary casts, disturbances of renal concentrating power, lowering of serum proteins, reversal of albumin-globulin ratio, edema and retention of waste products of metabolism.<sup>2</sup> Interference with the functions of the adrenal glands<sup>3,24,32</sup> even to the point of development of Addison's crisis have been described in connection with amyloidosis of the adrenals. There may be an extensive involvement of the liver<sup>31,35</sup> so that the various liver function tests may be indicated for diagnostic and prognostic purposes in certain instances. An involvement of the blood vessels and alveolar walls of the lungs

may seriously interfere with its function.<sup>27</sup> An extensive involvement of the intestine may cause almost any possible combination of symptoms, as a result of a disease process, in this tract, including: diarrhea, constipation, nausea, vomiting, meteorism, colicky pains, melena and vomiting of blood.

The exact nature<sup>14,15,28,29</sup> of amyloidosis in any of its four types is not known. By some it is considered a protein-containing product which is derived from the blood and deposited in the locations. By others it is considered a degenerative product formed primarily by connective tissues. Research on the chemical nature of the substance is in its infancy. It is generally agreed that there is not only some difference between the amyloid of the secondary and the primary types but also there may be some difference even in the same individual at different times and in various locations at any one time. Amyloidosis has been experimentally developed in a variety of animals and is frequently found in horses, used for commercial antisera production. It is readily formed in mice by the injection of tuberculin. Rabbits receiving repeated sodium caseinate injections will develop amyloid in their tissues.<sup>28</sup> It will be noted that in multiple myeloma there may be a relationship between the hyperglobinemia and the frequent amyloidosis. In amyloidosis secondary to suppuration there is rarely any increase in the serum proteins. There is, on the other hand, a prolonged antigen antibody type of reaction present with the possible production of unusual amounts and kinds of proteins. It has been estimated to require a minimum of nine months' time for the development of amyloidosis sufficient to give a positive congo red test.<sup>13</sup> Cases have been described<sup>21,25,36,37</sup> in which the associated disease was cured and the amyloid deposits slowly reabsorbed.

In a review of the literature Kerwin<sup>17</sup> found five cases and added two of his own in which amyloidosis of the heart led to heart failure. Cardiac amyloidosis may be classified into those in which amyloid was found in many other organs besides the heart; those in which the heart was involved with a few more rarely affected tissues, and a third group in which muscle systems are the principal sites of the deposits. The amyloid may be deposited in the artery walls and in the interstitial tissues of the myocardium.<sup>5,19,34</sup> Spain and Barrett<sup>30</sup> concluded that the obliteration of lumina of the arteries was the cause of the congestive heart failure. In our present case the interstitial deposits about capillaries was undoubtedly of equal or greater importance than the constriction of arteries. Extensive amyloid accumulation in the cardiac valves has been described<sup>18</sup> in the primary and multiple myeloma forms of amyloidosis. Pericardial and endocardial surfaces may be studded with nodules of amyloid while in other cases of myocardial amyloidosis the two surfaces remain normal. I have been unable to find a clear cut case of right heart failure (cor pulmonale) as the result of interference with pulmonary circulation by amyloidosis of the lungs.

Anatomical Diagnosis: Multiple myeloma; widespread mesodermal amyloidosis; severe cardiac amyloidosis; chronic congestive heart failure.

## References

1. Altnow, Hugo O., Van Winkle, Charlotte C., and Cohen, Sumner S.: Renal amyloidosis. A further study of the clinical course and pathologic lesions in fifty-seven cases. *Arch. Int. Med.*, 63:249-275, (Feb.) 1939.
2. Auerbach, Oscar, and Stemmerman, Marguerite: Renal amyloidosis. *Arch. Int. Med.*, 74:244-253, (Oct.) 1944.
3. Bannick, E. G., Burtman, J. M., and Beaver, D. C.: Diffuse amyloidosis, three unusual cases. *Arch. Int. Med.*, 51:978, 1933.
4. Berg, Samuel: Urinary protein partitions in amyloid nephrosis. *Arch. Int. Med.*, 67:1050-1060, (May) 1941.
5. Binford, Chapman H.: Primary amyloid disease of the myocardium and blood vessels. Report of a case with death from myocardial failure. *Arch. Path.*, 29:314-320, (March) 1940.
6. Clerf, Louis H.: Amyloid tumor of the larynx. *Arch. Otolaryng.*, 36:377-380, (Sept.) 1942.
7. Cohen, Samuel: Amyloidosis complicating tuberculosis-diagnosis, prognosis, and treatment. *Ann. Int. Med.*, 19: 990-1002, (Dec.) 1943.
8. Corbett, Richard W., Broders, Albert C., and Pool, Thomas L.: Amyloidosis of the urinary bladder. *J. Urol.*, 52:153-157, (Aug.) 1944.
9. Dillon, John A., and Evans, Lloyd R.: Primary amyloidosis: a report of three cases. *Ann. Int. Med.*, 17:722-730, (Oct.) 1942.
10. Dostrovsky, A., and Sagher, F.: Localized amyloidosis of the skin. Report of cases: the intracutaneous congo red test as a diagnostic aid. *Arch. Derm. & Syph.*, 44:891-906, (Nov.) 1941.
11. Editorial-Etiology of amyloid disease. *J.A.M.A.*, 106:1200-1201, (April 4) 1936.
12. Figi, Frederick A.: Excision of amyloid tumor of the larynx and skin graft: report of a case. *Proc. Staff, Mayo Clinic*, 17:239-240, (April 15) 1942.
13. Harmon, Paul H., and Kernwein, Graham: Utility of the congo red test in diagnosis and in differential diagnosis. *Arch. Int. Med.*, 70:421-433, (Sept.) 1942.
14. Hass, George M., Huntington, Robert, and Krumdieck, Newton: Amyloid III. The properties of amyloid deposits occurring in several species under diverse conditions. *Arch. Path.*, 35:226-241, (Feb.) 1943.
15. Hass, George, and Schulz, R. Z.: Amyloid I. Methods of isolating amyloid from other tissue elements. *Arch. Path.*, 30:240-259, (July) 1940.
16. Kernohan, James W., and Wolftman, Henry W.: Amyloid neuritis. *Arch. Neurol. & Psychiat.*, 47:132-140, (Jan.) 1942.
17. Kerwin, A. J.: Idiopathic amyloid disease of the heart. *J. Lab. Clin. Med.*, 22:255, (Dec.) 1936.
18. Koletsky, S., and Stecher, R. M.: Primary systemic amyloidosis. *Arch. Path.*, 27:267, (Feb.) 1939.
19. Larson, R. M.: A pathological study of primary myocardial amyloidosis. *Am. J. Path.*, 6:147, 1930.
20. Lehman, Robert G.: Hodgkin's disease complicated by amyloidosis and a nephrotic syndrome: case report. *Ohio State M. J.*, 39:232-233, (March) 1943.
21. Pearlman, Alexander W.: Regression of amyloidosis. *Quart. Bull. Sea View Hosp.*, 6:92-97, (Oct.) 1940.
22. Pearlman, Alexander W.: Amyloidosis, a clinical and pathological study of 135 cases. *Quart. Bull. Sea View Hosp.*, 6:295-308, (April) 1941.
23. Peters, Johan T.: Epicellular and pericellular depositions of amyloid as the starting point of amyloidosis. *Arch. Path.*, 35:832-835, (June) 1943.
24. Philpott, M. W.: Addison's disease in association with amyloidosis. *Ann. Int. Med.*, 1:613, 1928.
25. Reiman, H. A.: Recovery from amyloidosis. *J.A.M.A.*, 104:1070, 1935.
26. Reiman, H. A., and Eklund, C. M.: Long-continued vaccine therapy as a cause of amyloidosis. *Am. J. M. Sc.*, 190: 88, 1935.
27. Sappington, S. W., Davie, John H., and Horneff, J. Arthur: Primary amyloidosis of the lungs. *J. Lab. Clin. Med.*, 27: 882-889, (April) 1942.
28. Smetana, H.: Experimental study of amyloid formation. *Bull. John Hopkins Hosp.*, 37:383, 1925.
29. Smetana, H.: Relation of the reticuloendothelial system to the formation of amyloid. *J. Exper. Med.*, 45:619, 1927.
30. Spain, David M., and Barrett, Robert C.: Amyloidosis in atypical sites (cardiac valves, larynx). *Arch. Path.*, 38: 203-206 (Oct.) 1944.
31. Spain, David M., and Riley, Richard L.: Jaundice in amyloidosis of the liver. *Am. J. Clin. Path.*, 14:284-288, (May) 1944.
32. Stemmerman, Marguerite G., and Auerbach, Oscar: Adrenal amyloidosis. *Arch. Int. Med.*, 74:384-389, (Nov.) 1944.
33. Taran, Albert, and Eckstein, Albert: The standardization of the congo red test for amyloidosis. *Am. J. M. Sc.*, 203: 246-253, (Feb.) 1942.
34. Terland, D., and Gross, H.: Atypical amyloid disease. *J. Path.*, 11:93, 1935.
35. Tiber, Arthur Martin, Pearlman, Alexander W., and Cohen, Samuel E.: Hepatic function in patients with amyloidosis. *Arch. Int. Med.*, 68:309-324, (Aug.) 1941.
36. Trasoff, Abraham, Schneeburg, Norman, and Scarf, Maxwell: Recovery from multiple rheumatoid arthritis complicated by amyloidosis in a child. Report of a case and review of the literature. *Arch. Int. Med.*, 74:4-10, (July) 1944.
37. Walker, G. F.: Case of recovery from amyloid disease. *Lancet*, 2:120, 1928.

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◆ HISTORY OF MEDICINE IN MINNESOTA ◆

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**NOTES ON THE HISTORY OF MEDICINE IN HOUSTON COUNTY  
PRIOR TO 1900**

By NORA H. GUTHREY†

Mayo Clinic

Rochester, Minnesota

*(Continued from the October Issue)*

**Otto Ferdinand Fischer** was born at Le Sueur, Minnesota, on August 21, 1872, the eldest child of The Reverend and Mrs. Ferdinand Fischer. The second son was Arthur, the two daughters, Martha and Laura.

Ferdinand Fischer, the father, was born at Havelberg, Germany, and was well educated in the Prussian schools. When he was eighteen years of age, he came to the United States, traveled at once to Minnesota, took a claim near Rice Lake, and as soon as possible became a naturalized American citizen. While still a very young man, he entered earnestly into the work of the Methodist Church, soon afterward was licensed to preach, and thereafter devoted himself to the ministry. He was a lifelong member of the Northwest German Conference. During the early years he was a circuit rider, later he served as resident pastor in different towns; at the time of the birth of his son, Otto, he held the pulpit of the Methodist Church in Le Sueur. His wife, Lina Uhl Fischer, was born in Wuerttemberg, City of Rottweil, Germany, the daughter of Dr. Matthew Uhl. Sometime in the fifties, in search of greater freedom, Dr. Uhl brought his family to America, when Lina was fourteen years old; they first lived in New York and later in La Crosse, Wisconsin.

Owing to the fact that his father was an itinerant minister, Otto Ferdinand Fischer received his early education in the public schools of various Minnesota towns. After his graduation from the state high school at Northfield as valedictorian, in 1893, he entered the Medical School of the University of Minnesota, from which he received his degree of Doctor of Medicine in 1897. His license to practice medicine in Minnesota had been issued on June 9, 1896, so that he might serve his internship while completing work toward his degree, and he accordingly was on duty in the Asbury Methodist Hospital from November 10, 1896, to April 1, 1897. Thereafter for a term he served as assistant physician on the medical service of the Quincy Mining Company at Hancock, Lake Superior, Michigan; he was licensed to practice in Michigan in 1900. It is of interest that his brother, Dr. Arthur F. Fischer, who settled in Hancock, became chief medical officer of the Quincy Mining Company and well known in the state for his work in the interest of public health, particularly against tuberculosis. He died at Hancock on May 17, 1935.

In 1898 Dr. Otto F. Fischer began his long and honorable career as citizen and physician in Houston County, for a few months in Caledonia, for twenty-eight years in Houston. A man of religious faith and of a well-developed

sense of social obligation, early in life he joined the Methodist Church, of which he remained a steadfast member and in which he served in various capacities. He always was ready to assist the pastor, either in a large enterprise such as working for a new church or parsonage, or in the lesser details of administration. One of his distinguishing characteristics was his sympathetic interest in young people. For many years he taught the Young People's Bible Class of the Money Creek Sunday School, giving careful thought to the instruction and to the weekly recreational program of the students; he was active in the Epworth League also and was a member of the Epworth League Institute Commission. As a natural expression of his interest in the youth of the public schools, he served on the school board in the Houston district for nearly fifteen years, as president of the board during many of them. Nor was he less interested in matters of public welfare and, when time permitted, in social gatherings of the community. In the earlier years he took part in musical organizations and enjoyed horseback riding and tennis. His business ability, evidenced in all his undertakings, was much respected. For many years, until his death, he was one of the directors of the Houston State Bank. He owned "Elm Court" and his home in Houston.

Dr. Fischer never married. From his sisters and from old friends have come recollections of his selfless devotion to his profession and to his patients; the long drives by day and night through rain and snow, over muddy and even flooded roads; the long periods without sleep. Only once, during an epidemic of influenza, did he employ a driver so that he might catch a few moments of rest between calls. His horses and, later, his trusty Ford, were well cared for; there never was delay in answering calls. A common occurrence in the household was the sound of the telephone in the night and the quiet answer of the doctor, "I'll come at once," and shortly afterward the departing sound of hoofbeats or of the car.

It followed naturally that this physician should be representative in matters of public health and sanitation and that he should long serve as a member of the board of health and as local health officer. And in the field of medical organization, by his able and faithful work he distinguished both the societies with which he was affiliated and himself. Much of the success of the Houston County Medical Society and of the Houston-Fillmore County Medical Society, after the merger of the two county groups in 1904, was owing to his loyalty and wisdom as secretary for twenty years; he was the only member to give the organization such continued devotion. As one of his confreres in Houston County has said, "If this splendid man's history is at all complete, there should be much regarding the county society in it." Dr. Fischer was likewise a strong supporting member of the Southern Minnesota Medical Association, the Minnesota State Medical Association and the American Medical Association.

Dr. Otto Ferdinand Fischer died suddenly at his home on October 11, 1926, from angina pectoris. Greatly loved and honored as he was, personal and official tributes were paid him by school children, friends, patients and associates, by the press, the local board of education and by the Houston-Fillmore Medical Society, the members of which were present as a group at the funeral services, and by the Minnesota State Medical Association. Perhaps none of the expressions of appreciation more truly evaluated the qualities of mind and heart which animated him and made him loved and honored than the following excerpt from a letter written to his sisters by an old friend of the family in Houston:

## HISTORY OF MEDICINE IN MINNESOTA

Your brother was so sincere and trustworthy, so sane in his judgment, that we have lost a great deal too. He was always comforting and encouraging as a physician, he always made the sickroom seem a hopeful place. The older one gets, the more one appreciates the few outstanding ones who are utterly trustworthy. . . .

After his death a little newspaper clipping was found in Dr. Fischer's notebook: "A real man is not known by what he can get out of his work but what he can put into it; and that his profit be not at the loss of another, he will take great pains to 'give good measure, pressed down, and shaken together!'"

Dr. Fischer was survived by his two sisters, Miss Martha A. Fischer and Miss Laura C. Fischer, teachers, who in 1941 were living in Sioux City, Iowa.

**H. T. Fox**, the first resident physician in the township of La Crescent, came to the village of this name in 1856 from Lexington, Kentucky, perhaps as a member of The Kentucky Company that was promoting the ambitious settlement, certainly because of it. During the Civil War Dr. Fox served as a military surgeon, it has been said, and after the war he resumed his residence in La Crescent and practiced medicine there until his death in 1875.

**W. W. Freeman**, who was practicing medicine in Houston County by 1883 and probably some years earlier, has been recorded as a graduate of Dartmouth College and as having received his degree in medicine from the University of Pennsylvania in 1877. His license to practice in Minnesota was issued in December, 1883, under the "Diploma Law." After fifteen years in Caledonia he sold his practice, in 1898, to Dr. De Costa Rhines, then in Houston, and removed to Grand Meadow, Mower County, where he established himself in practice. When the Mower County Medical Society was founded at Austin on October 3, 1902, Dr. Freeman was one of the physicians present. It is worthy of note that during most of the years that Dr. Freeman was in Houston County, there is evidence indicating that another Dr. W. W. Freeman, also a licentiate of 1883, was in Anoka County, and it is of possible interest that in 1906 there was living in Eads, Colorado, Dr. Willard W. Freeman, who was born in 1839 and who was licensed in 1906 to practice in Colorado.

**Albert C. Gates**, a member of the regular school of medicine, was a contemporary of Dr. G. J. Sheldon, of Mound Prairie, for at least part of the period between 1853 and 1880, the term of Dr. Sheldon's residence in Houston County. A resident of Caledonia, Dr. Gates early in 1883 was serving as county health officer. On November 26, 1883, under the act to regulate medical practice, he received state exemption certificate No. 416-3.

**George L. Gates**, son of Grose and Phebe Bolles Gates, was born on December 4, 1837, at Harwington, Litchfield County, New York. When George Gates was a young boy, the family moved to Cortland, New York, and it was in the public schools and at Cortland Academy that he received his academic education and some instruction in premedical subjects. In 1855 the family came to Winona County, Minnesota, where they made their new home on a farm in Saratoga Township. George remained at home until the outbreak of the Civil War when, on September 28, 1861, he enlisted and was mustered into service as a private in Company A of the Second Minnesota Regiment of Volunteer Infantry. He served for three years with the Army of the Cumber-

land in Tennessee, Georgia and Kentucky and was discharged honorably and mustered out on September 27, 1864. During his last three months in the army, his interest in medicine and his ambition to become a physician had been renewed by his service with an ambulance corps; consequently, although he returned home after his discharge to spend a few more years on the farm in Winona County, as soon as possible he entered the Medical School of the University of Pennsylvania, from which he was graduated in 1869.

Dr. Gates first practiced medicine in Cortland, New York, with his cousin, Dr. H. A. Bolles, until 1872. In that year he returned to Minnesota, to settle in Caledonia, Houston County, where he followed his profession for eight years and where for six years, beginning in 1874, he was county coroner. In 1880 he returned to Winona County, to the village of Winona, where he remained, practicing after 1883 under state exemption certificate No. 574-3. In 1892 and for a time thereafter he was a member of the local United States pension examining board. He was a Republican, a Mason, a Knights Templar, a Shriner, and a member of the John Ball Post, No. 115, of the G. A. R. Club. An excellent physician and a progressive member of the medical profession, he identified himself with the medical association of county, state and nation.

**Stewart V. Groesbeck** was born on September 23, 1841, at Otselic, Chenango County, New York. When he was seven years of age, the family moved to Wisconsin and it presumably was in that state that he received his early education and perhaps studied medicine under a preceptor, for record is not known of his having been graduated from a medical college. That he was of the eclectic school of thought is known, because he was a member of the old Minnesota State Eclectic Medical Society that was founded on May 26, 1869, at Owatonna, in Steele County. Soon after the outbreak of the Civil War, S. V. Groesbeck, not yet a physician, enlisted on September 23, 1861, in Company F of the Eighth Wisconsin Regiment of Infantry; he twice was wounded in service, and was discharged from the army in November, 1864, after which he returned to Wisconsin and probably to his study of medicine. It has been stated that Dr. Groesbeck was in Houston County a year and a half in the period of 1864 and 1865 in association with Dr. Bowen, and it has been recalled that he was in High Forest, Olmsted County, from about 1868 to 1872. In High Forest he is remembered as a man of medium size and coloring who wore a mustache, who was kindly, jovial and well liked. Practicing as he did in a period when typhoid fever was common, it is remembered of him also that in all cases of illness he assumed the presence of the disease until it was disproved.

From High Forest Dr. Groesbeck went to Marshall, Minnesota, where he became a citizen of some prominence in fraternal, civic and medical affairs. By 1887 he was in the Territory of Dakota at Watertown, Codington County, and there on June 11, 1887, he took an examination for a license to practice medicine in the territory and on the following June 23 received his certificate. By 1906 he was a resident of Spearfish, South Dakota. He became surgeon to the National Home for Disabled Volunteer Soldiers at Hot Springs, South Dakota, and it was there that he died on December 31, 1908. During his later years he had been elected to membership in the American Medical Association.

Although **E. W. Hammes**, born at Milwaukee, Wisconsin, a graduate of Rush Medical College in 1879, was mentioned in the records of Houston County

of 1882, evidence has not appeared of his residing in that county. On October 11, 1883, Dr. E. W. Hammes, then in New Trier, Dakota County, received state certificate No. 9 (R), and in the communities of New Trier and Hampton he practiced for the succeeding forty-six years with the exception of a few years spent in Winona in the middle eighties. His death occurred on October 3, 1934, at St. Joseph's Hospital, St. Paul. He was survived by his widow, the former Miss Anna Schmidt, of Rollingstone, Minnesota, and three children: Dr. E. M. Hammes, Miss Theresa Hammes and Mrs. Albert Muellerleile, all of St. Paul.

—Hill was said to have practiced medicine in Houston County, presumably in the earlier period of its history.

**Edward L. Hills**, of Hennepin County, under the Medical Act of 1887 was licensed, on July 10, 1891, to practice in Minnesota, and his certificate was filed in Houston County three weeks later, on July 30. In 1896 a Dr. E. L. Hills, a graduate of Rush Medical College in 1879, was practicing medicine in Minneapolis. Whether Dr. Hills ever actually resided in Houston County has not been determined; there is record that on June 21, 1906, he filed his license in Fillmore County also.

**F. B. Hinkley**, born in Licking County, Ohio, came to Minnesota in 1865 and by 1874, and obviously earlier, was in Sheldon Township, Houston County; "Physician and surgeon, Harvest Bitters Manufactory," so it was recorded in the "Illustrated Historical Atlas of Minnesota," of 1874.

**William W. Holden** was born in Saratoga County, New York, on May 15, 1853, and until he was nineteen years of age he lived on a farm and acquired his preliminary education in local schools. In 1873 he entered the Medical College of Keokuk, in Iowa, and for two years, until he was graduated in 1875, it has been said, he earned his way by working in a drug store. On May 30, 1874, he was married to Hattie Wilcox; in 1877 Dr. and Mrs. Holden with their daughter, Zella, settled in Hokah, where the doctor built up a large medical practice.

There is an obvious discrepancy in official records relating to Dr. Holden's medical qualifications. In the records of Houston County it appears that he was graduated from a medical college in Keokuk in 1881 and that his certificate to practice in Minnesota was issued on December 26, 1883, and was recorded on December 28, 1883. In the Official Register of Physicians of Minnesota (1883-1890) William W. Holden, of Hokah, is listed as a graduate of the "College of P. and S., Keokuk, Iowa, 1887" (in a later issue the year was given as 1881), whose Minnesota state certificate No. 403 (R) was issued on November 26, 1883. There is agreement, however, in historical accounts, that he began to practice medicine in Hokah Township, from the village of Hokah, in 1877, and that he remained there at least through 1885. It was in 1881, and probably earlier, that he served as health officer for the adjoining township of Union; in 1882 he became health officer for Hokah Township also.

In a news item of March 17, 1899, in the *Rochester Post* it was stated that Dr. W. W. Holden (then of Amboy, Blue Earth County) had brought his son, Charles, to Rochester for "removal of a bullet, accidentally fired into his brain"

two days previously; x-ray examination revealed the bullet, which was removed successfully. Some time subsequent to this period Dr. Holden removed to Winnebago City, Faribault County, where, as late as 1909, he was practicing medicine, according to the official state register of physicians of 1883-1909.

**Truman R. Humphrey** was born on December 3, 1813, at Richmond, Vermont. Educated in Medicine at Boston, he at first practiced medicine in Stoughton, Massachusetts. Later, in 1858 or 1859, he went to La Crosse, Wisconsin, and in 1859 crossed the Mississippi River into Houston County and homesteaded near the village of Hokah. In 1864 he removed to Brown County, where he took up a claim near Sleepy Eye on which he lived with his family until 1897, when he established the family home in Sleepy Eye. Throughout this period he practiced his profession and was influential in the social and economic development of the community. From 1887 to 1892 he served as county coroner. A highly respected citizen and physician; he died in Sleepy Eye on October 11, 1907.

**Charles Jenks**, the first medical practitioner in Hokah, in 1856, began his professional career while he was still a student, carrying on practice between courses at medical school. Unfortunately, a record has not been discovered as to what school he attended or under what preceptor he may have studied. He and Dr. Train were the physicians in Hokah when the village was at the height of its early and remarkable prosperity.

**Thore Erlemoen Jensen**, the son of Mr. and Mrs. Jens Jorgensen, who were farmers, was born at Tolgen, Norway, on March 5, 1840. Jens Jorgensen was born at Vingelen, Norway, and his wife, Marit Jonsen Jorgensen, at Tolgen. When their son Thore was thirteen years old Mr. and Mrs. Jorgensen brought him and their three other children, George, Ingeborg and Kjerstine, to America. With their young family and very slender financial resources they arrived in Spring Grove Township, Houston County, in 1853 and at once secured a tract of wild government land near the settlement of Spring Grove, and here they built their first home, a small log house.

Thore had attended elementary school in Norway. A natural student and determined to learn, he continued his education in Houston County whenever work on the pioneer farm permitted, reading as much as possible, especially on scientific subjects. In 1863, then in his early twenties, he was appointed postmaster of Spring Grove. Although much earlier he had chosen medicine as his profession, nearly a decade was to elapse before he entered the Eclectic Medical Institute at Cincinnati for his formal medical training. After his graduation, on January 27, 1874, Dr. Jensen returned to Spring Grove, where he built up the heavy medical practice that lasted without intermission for nearly forty years. Much of the time he was the only practicing physician in the locality, and his territory extended to Houston on the north and to Decorah, Iowa, on the south. After November 24, 1883, he practiced under state certificate No. 377 (E).

On October 10, 1875, Thore E. Jensen was married to Ingeborg Onsgard. As the exigencies of medical practice would have it, care of the sick came before personal plans, and on this day he was called into the country to perform an emergency amputation of an arm; the patient, a pioneer farmer, was living in 1940 and enjoyed telling of the surgical operation that postponed the doctor's wedding. Ingeborg Onsgard was born at Ness Hallingdahl, Norway, on

November 3, 1853. When she was seven years old, she came with her parents, Knute and Bergit Onsgard, to Houston County, and she proved to be a true pioneer daughter, helping in all parts of the work on the homestead, even driving oxen while her father held the breaking plow.

Dr. and Mrs. Jensen had three children, a son, James, and two daughters, Inga Theoline and Bergette Mathilda. The home life of parents and children was ideal and all the dearer to Dr. Jensen because his professional work required frequent absences from the family circle. Often he would be away for days at a time on a round of professional calls and in his absence patients who came to see him at his home waited there for him, often overnight. Mrs. Jensen's role as the wife of a physician was not an easy one in those years; it was usual for her children when they returned from school to find her ministering to the sick.

Dr. Jensen's experiences in the earlier years of his practice were those of pioneer physicians throughout the new land, full of hazard and responsibility, but with relieving high lights of humor. Forgetful of himself, fortunately of sturdy health, he hastened to all patients in need of him, surmounting dangers of roads and weather. One dark night of torrential rain he was attempting to make such speed that he failed to stop his horses when he noticed a man waving a lantern. In a moment he and the team were plunged into a flood where he had expected to find a bridge. By holding onto the reins he was able to struggle across. The next day, in describing his escape, he remarked: "I never knew before that I could swim." On one occasion in the home of a patient when he was asked to baptize a dying child and when he discovered that there was no water in the house, he resourcefully looked about and used coffee that remained in a pot on the table.

At the beginning of his medical practice Dr. Jensen owned and operated a drug store and had his offices in the upstairs rooms. His medical and surgical work soon required his entire attention, however, and after a few years he sold his interest in the store to his partner, Elling Reierson. In a later period, after 1900, for a few years he assisted Dr. W. E. Browning at the Caledonia Hospital.

In his devotion to his profession Dr. Jensen used his influence to persuade young men of ability to study medicine, among them Mrs. Jensen's two brothers, Lewis K. Onsgard and Christen K. Onsgard, and in due time his own son, James, and urged on them the importance of keeping abreast of medical advance by reading the best of medical books and current medical journals. A scholarly man, follower of his own advice, he possessed a fine library of religious works, medical books and publications and in his desire to increase his knowledge and efficiency, he studied constantly and traveled whenever possible. In 1890 he took a course at the New York Postgraduate School. Among his valued personal possessions were group photographs of his teachers and his fellow students, both in Cincinnati and in New York, and in the picture taken at the postgraduate school there appears with Dr. Jensen his classmate from Olmstead County, Dr. Charles H. Mayo. Dr. Jensen was a member of the Alumni Association of the Eclectic Institute, and he was one of the men responsible for the success of the Houston-Fillmore County Medical Society. On one occasion, when the members of this county group met in convention at Spring Grove, as a surprise he entertained them at dinner, a bountiful feast beautifully appointed.

It is understandable that a man of Dr. Jensen's sensitive intelligence should

be a devout Christian who gave liberally to the Lutheran Church, of which he was a member, and to the colleges maintained by the church, and that his hobbies were fine music and beautiful flowers. Near the large and comfortable family home his carefully landscaped flower garden of many beds of different sizes and shapes was throughout the season a mass of gorgeous color, a source of pleasure to his family and to members of the community, who still recall the sight.

To his patients and their families Dr. Jensen was not only the skilled surgeon and physician, and he achieved an enviable reputation as a diagnostician, but also the friend, of keen and kindly humor, radiating sympathy. Although in his later years he long was in failing health, he continued his active practice until 1911, but even after his retirement many would not give him up as their physician and would come long distances to consult him at his residence. The news of his death on April 3, 1915, brought a sense of loss to hundreds of homes.

Thore Erlemoen Jensen was survived by his wife and children. His son, Dr. James C. Jensen, of Hendricks, Minnesota, a graduate of Luther College, Decorah, Iowa, in 1899 and of the University of Minnesota in 1903, died on October 22, 1928. Mrs. Jensen and the two daughters, Inga Theoline and Bergette Mathida (Mrs. Nels Kjome) in 1940 were living in Spring Grove.

**Henry Porter Johnson**, the sixth of nine children, the son of David and Almira Corey Johnson (who respectively were from New Hampshire and Massachusetts and of English and Scotch-English parents) was born on February 3, 1855, near Oshkosh, Winnebago County, Wisconsin. The family removed in June, 1855, to the settlement of Pleasant Hill, Fremont Township, in Winona County, Minnesota, where they lived on a farm. Henry Johnson's early education was received in the public schools of Houston County and in the high school and the State Normal School at Winona. After teaching two terms of school he entered Rush Medical College in Chicago and in 1879 was graduated.

Dr. Johnson first practiced medicine in Hancock, Minnesota, until 1882, when he went to the village of Houston, in Houston County, where he remained ten years. After November 12, 1883, he held Minnesota license No. 316 (R). He was coroner of the county four years, beginning in 1883, and again in 1891 and 1892. For four years after leaving Houston, in 1892, he was in La Crosse, Wisconsin, developing a large practice, which he gave up in 1896, preferring to return to a quieter life in a smaller place, in Long Prairie, Minnesota.

In 1899 Dr. Johnson moved to Fairmont, Martin County, which became his permanent home and the scene of a continuously active and useful life, in social, civic and professional affairs. At one time affiliated with the Episcopal Church, he later joined the Methodist Church. He was a Republican, a Mason, a member of the Kiwanis Club; he served as a member and as president of the school board, vice president and director of the Citizen's National Bank and president of the local board of health for many years. For a time, in Fairmont, Dr. Johnson was associated in practice with his brother, E. B. Johnston (both spellings of the surname are correct), but otherwise he practiced alone until his son, Dr. Donald W. Johnson, joined him. For several years he owned and operated the Johnson Hospital at Fairmont.

*(To be continued in the December Issue)*

# President's Letter

## THE HERSHEY CONFERENCE ON "MEDICINE AND THE NEUROSES"

The timely report on the Hershey conference\* is available and should be read widely by everyone interested in the medical drift of our times. W. A. O'Brien, our distinguished director of graduate medical education at the University of Minnesota, is arranging a course covering the various phases of psychosomatic medicine, and particularly the anxiety neuroses at the Center for Continuation Study. Distinguished teachers in this borderline field between internal medicine and neuropsychiatry are to be invited to Minnesota to help introduce this presently vital field of medical endeavor. A large attendance is urged.

The Hershey, Pennsylvania, meeting was called primarily to discuss the rehabilitation problems arising from the high incidence of nervous disorders among military recruits. However, the report made by this group of neuropsychiatrists, mental hygienists and internists is applicable to many of the diagnostic and therapeutic problems we have all battled with in the past decade. Whether in the military forces or facing the conflicts of civil life, many otherwise useful and efficient citizens demonstrate in full force the somatic or regional symptom outcroppings that arise where the individual is unable to resolve the static within his conflicted consciousness.

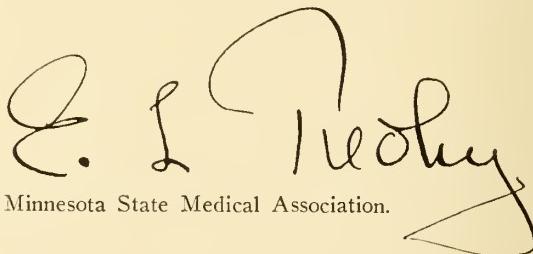
These issues must be faced without deviation or "buck passing." Only one other medical problem exceeds in extent and complexity this issue: it is that of age—what to do with, and for, those past the prime of life heading into possible cancer and cardiovascular decline. The neuros may irritate us and clog up all our facilities (clinics and hospitals) with their somatic wailings; but they do not die on our hands, and most of them pay for and appreciate our help, i. e., if we do not accept their own dire verdicts and order the surgical removal of any dispensable organ emitting a somatic squeak. No especial surgical salesmanship is needed to effect a deal. The individual is so unhappy and perturbed with the thought of self-preservation that an operation is grabbed at even as a person catapulted into the water appreciates a life preserver. You will find among many other items of the brochure these thought-provoking passages:

1. "It can be presented effectively in three weeks with appropriate material." You see, it isn't going to be as simple as acquiring penicillin technique.

2. Speaking of what small-town doctors read: "The little commercial journals put out by pharmaceutical houses . . . are much more widely read than the *Journal of the American Medical Association*." (To Dr. Fishbein and other gifted editors, a timely "Ouch!")

3. As to the unsettled Veteran: "We are convinced that the Veteran is going to be treated by the general medical group of America. . . ." That means out in the hamlets as well as the metropolitan areas.

4. And this for politically placed Veterans' Hospital Extensions: "The psychoneurotic Veteran, generally speaking, is *not* in need of hospitalization, and in most instances would be injured rather than helped by bed rest." From the two world wars and a few from the Spanish-American war we have in Minnesota 418,000 military veterans. I hope many readers will send for the Hershey pamphlet.



President, Minnesota State Medical Association.

\*The National Committee for Mental Hygiene, Inc., 1790 Broadway, New York 19, N. Y.

# Editorial

CARL B. DRAKE, M.D., *Editor*; GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

## METHIONINE IN TOXIC HEPATITIS

THE protective value to the liver of a high carbohydrate diet has long been recognized. The equal importance of plenty of protein in the diet in affording protection to the liver against toxic substances such as chloroform, carbon tetrachloride and trinitrotoluene has only recently been stressed.

It has been shown repeatedly that well-fed dogs can tolerate an hour of chloroform anesthesia without evidence of liver injury. On the other hand, dogs starved for three days show marked hyaline central necrosis of the liver lobules, an increase of bile pigment in the blood and urine, and occasionally die in two to four days following the same period of chloroform anesthesia. Further, if dogs that have fasted for three days are given a full meal several hours before being subjected to chloroform anesthesia, they will not show evidence of liver injury. Miller, Ross and Whipple<sup>5</sup> have also found that protein depleted dogs, if given a few grams of the amino acid methionine twenty-four to four hours before chloroform anesthesia, will tolerate forty minutes of anesthesia without showing evidence of frank intoxication or signs of liver injury.

Methionine and cystine are the two sulphur-containing amino acids. However, cystine alone will not exert this protective action, but, combined with choline, does. This fact has led Georgy<sup>4</sup> to suggest that perhaps cystine and choline produce a third substance in the liver, possibly methionine. The explanation of the protective action of methionine for the liver may well lie in the detoxifying action of the sulphur radical of this amino acid.

The observation that methionine given as late as four hours following the administration of chloroform anesthesia to protein depleted dogs will prevent fatality, although it will not prevent some liver injury, has led to its use therapeutically in cases of exposure to the toxic action of chloroform, carbon tetrachloride and trinitrotoluene.

Beattie<sup>1</sup> was the first to use methionine clini-

cally in the treatment of carbon tetrachloride poisoning. An Air Force pilot swallowed accidentally 30 to 40 c.c. of carbon tetrachloride. Treatment consisted of methionine orally and a papain-pancreatic digest of casein to which methionine was added, intravenously. Recovery was prompt. The case report which appeared in the British Medical Journal of February 12, 1944, was considered to be of sufficient importance to be abstracted in an editorial in the AMA *Journal* of March 25, 1944.

Since then Eddy<sup>2</sup> has reported the treatment of several colored women poisoned by the fumes of carbon tetrachloride, two of them extremely sick with evidence of liver and kidney damage, with high carbohydrate, high protein and low fat diet and methionine in 2 gram doses orally every four hours in most cases, although some received larger doses. All recovered.

Eddy<sup>3</sup> has also reported the treatment since July, 1944, of thirty individuals suffering from toxic hepatitis, the most of them caused by trinitrotoluene and ten of them extremely sick, by methionine orally without a fatality. They also received high protein, high carbohydrate, low fat diet, by duodenal tube when necessary. Two patients with epidemic hepatitis also showed striking improvement in forty-eight hours under this treatment.

Casein contains many essential and nonessential amino acids. Casein and egg white are rich in methionine. It is also contained in serum albumen.

Methionine is manufactured by Merck and is available in 1-, 5-, and 10-gm. bottles. Wyeth is putting methionine on the market under the trade name of Meonine.

There are several preparations of amino acids available for intravenous administration. The preparation put out by Stearns, for instance, is a 15 per cent solution of amino acids, 3.25 per cent of them being methionine.

It would seem that methionine, of all the amino acids, has a special detoxifying action against

certain toxins which affect the liver, such as chloroform, carbon tetrachloride and trinitrotoluene. Its detoxifying action in hepatitis may possibly extend to other liver toxins, and may be of value in liver injury due to nutritional factors. The fact, however, should not be overlooked that the liver has a remarkable recuperative capacity if provided with sufficient carbohydrate and protein.

#### References

1. Beattie, J.; Herbert, P. H.; Wechel, C., and Steele, C. W.: Studies in hepatic function. I. Carbon tetrachloride poisoning treated with casein digest and methionine. *Brit. Med. Jour.* 1:209 (Feb. 12) 1944.
2. Eddy, James H.: Carbon tetrachloride poisoning. *J.A.M.A.* 14:994 (Aug. 4) 1945.
3. Eddy, James H.: Methionine in the treatment of toxic hepatitis. *Am. Jour. Med., Sci.*, 210:374 (Sept.) 1945.
4. Georgy, Paul: Experimental hepatic injury. *Am. Jour. Clin. Path.* 14:67, 1944.
5. Miller, Leon L.; Ross, J. F., and Whipple, Geo.: Methionine and cystine, specific protein factors preventing chloroform liver injury in protein depleted dogs. *Am. Jour. Med. Sci.* 200:739, 1940.

#### NEW PREPARATIONS OF PENICILLIN

**A**MONG the newer preparations of penicillin, that prepared in beeswax for delayed action by intramuscular injection has certain advantages. One injection daily of 1 c.c. of this preparation containing 300,000 units obviates the necessity of hospitalization or frequent professional visits. The wax is difficult but not impossible to administer in that it must be warmed to 113 to 124 degrees F. for liquefaction and must be given in a dry, warm syringe through a large needle promptly. While the cost of about \$6.00 for a 1 c.c. ampoule is considerable, it may prove more economical to the patient.

Tablets of penicillin, 20,000 to 25,000 units per tablet, buffered with a mild alkali to prevent destructive action of gastric juice, have been proven effective for certain of the milder infections. They should be given at least a half hour before eating and at least two hours after a light meal in 40,000 or 50,000 unit doses every two or three hours, day and night. The cost to the patient of 55 cents a tablet is considerable. Gonorrhea is said to respond to such dosage in two or three days. Tablet dosage may also be used for a few days following an initial response to parenteral penicillin in pneumococcic, streptococcic and staphylococcic infections.

It should be emphasized that continuous intravenous or intramuscular injections at three-hour intervals are the preferable methods of treating the more severe infections due to staphylococci,

hemolytic streptococci, pneumococci and meningococci. It is apparently worthless in all Gram-negative bacillary infections such as typhoid, paratyphoid, dysentery, undulant fever and tularemia. It is also ineffective in tuberculosis, acute rheumatic fever, infectious mononucleosis, Hodgkin's disease, leukemia, ulcerative colitis, malaria, poliomyelitis and virus infections.

#### MORTALITY TRENDS IN THE LAST TWO DECADES

**T**HE Metropolitan Life Insurance Company has recently charted the trends of mortality during the past two decades in white policy holders according to sex,\* and they are interesting. To mention a few of the findings which can confidently be taken to reflect the trends in the white population of the country:

There has been a marked decline in mortality during the past two decades, but it is surprising to find that the drop has been 43 per cent among white females and only 26 per cent among white males. This greater improvement among females applies to most of the important causes of death.

Chronic heart disease heads the list as cause of death in both males and females. While there has been a slight increase among males there has been definite decrease among females. Inasmuch, however, as there was no heading of diseases of the coronary arteries and angina pectoris twenty years ago, the figures for this heading greatly increase the number of males dying from heart disease and just about counteract the improvement in females. The mortality for coronary heart disease is about three times as great in males as in females.

Tuberculosis has been reduced to a third in males and to about one fourth in females and for all ages is now about twice the figure for males as females. The same applies to pneumonia. The mortality from chronic nephritis has been halved for both males and females. Cancer has shown an increase from 74.8 to 84.8 per 100,000 in males and a decrease from 88.2 to 82.7 in females, so that it is now equally important in the two sexes.

It is quite surprising that deaths from cerebral hemorrhage have been reduced a good third in both sexes. Interesting, too, is the finding that deaths from diabetes show a slight reduction in males and an increase in females so that now

\*Sex differences in mortality trends. *Statistical Bulletin, Metropolitan Life Insurance Company*, 26:5 (Sept.) 1945.

twice as many females die of diabetes as males. Deaths from typhoid, measles, whooping cough, scarlet fever and diphtheria are now less than 1 per 100,000 in each sex. Deaths from appendicitis have been halved in each sex. The figures for accidents show a reduction of a quarter for males and a third for females, some three and a half as many males as females dying from this cause.

These statistics compare the mortalities of the years 1921-1923 with 1941-1943 and presumably have been little affected by the war. The several factors of better medical care, better public health supervision, public safety campaigns and a better informed public are doubtless responsible for the general reduction in mortality.

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#### THE RESPONSIBILITY OF THE PRIVATE PHYSICIAN IN TUBERCULOSIS CONTROL

The importance of the general practitioner in the control of tuberculosis among private patients is emphasized by the findings of the Public Health Service in chest x-ray surveys conducted among more than a million industrial workers and by the discovery of a relatively high incidence of the disease among rejects of the armed forces.

Eight mobile x-ray units, operated by the Tuberculosis Control Division of the Public Health Service in various parts of the country, found that three in every 200 persons examined had x-ray evidence of reinfection tuberculosis—active or inactive. Sixty-five per cent of the lesions were in minimal stage, 30 per cent in moderately advanced stage and 5 per cent of the lesions in far-advanced stage. Pre-induction examinations by Selective Service alone revealed 150,000 cases with x-ray evidence of tuberculosis.

That the family physician will be called upon to treat a great majority of these persons is borne out by the experience of the U. S. Public Health Service and of the National Tuberculosis Association and its affiliates. In industrial surveys an overwhelming number of workers who could afford private care designated their family physicians—general practitioners—as the doctors to whom the report of the x-ray findings should be made. When these reports are sent out they are accompanied by a request that the physician confirm or disprove the x-ray findings by further clinical studies—such as history and physical examination, laboratory tests and repeated x-ray examinations. He is also asked to examine contacts and to report the new cases of tuberculosis to the local health department.

The average patient has a great deal of confidence in his private physician and expects him to treat tuberculosis just as he would accept other family medical emergencies. Psychological factors make this desirable and practical considerations make it feasible, especially if the physician possesses sufficiently broad understanding of tuberculosis and modern therapeutic methods. Sanatorium care is no longer the only method of tuberculosis

control. Many minimal lesions and a limited number of inactive advanced lesions are amenable to outpatient supervision under strict medical care. This supervision and care can often be rendered by the alert general practitioner who possesses modern knowledge of the diagnosis and treatment of tuberculosis.

The demand for this type of care is expected to increase rapidly as mass radiography units penetrate all sections of the country, uncovering a large number of unsuspected cases of pulmonary tuberculosis that will need medical supervision—before and after sanatorium care.

The personal experience of actually having a chest x-ray will stimulate thousands of individuals to seek medical care, from general practitioners, chest specialists and radiologists, either for tuberculosis or for other chest conditions found on survey examinations.

Through their vast nationwide educational program, their case-finding and rehabilitation work, which are supported by the sale of Christmas Seals, the National Tuberculosis Association and its affiliated groups will continue to awaken communities to the dangers of the disease. As a result, communities will provide the armamentarium needed for the proper care of the tuberculous patient—hospital beds, clinics, laboratories, rehabilitation service, extensive chest surveys and generous social assistance for the dependents of the tuberculous patient.

The by-product of co-operative plans of public agencies and voluntary associations will provide new aids for the physician in private practice—x-ray, laboratory and consultation services, as well as opportunities for postgraduate training. With these aids he will be better equipped to meet the increasing demands of the tuberculous patient for his services.

As x-ray surveys become an annual routine in many communities, more and more minimal lesions will be found, and, conversely, fewer advanced lesions, which now, in most cases, require immediate sanatorium care. The reversal of the old ratio will shorten and simplify therapy for the larger proportion of tuberculous patients, will assure quicker and more complete treatment, and greatly increase the chance of vocational rehabilitation.

A better distribution and greater expansion of clinic, x-ray field services and laboratory facilities will bring modern diagnostic aids within the reach of every general practitioner in urban or rural areas. New, well-equipped sanatoria, more accessible to population centers, and accredited for residency training, will provide convenient consultation service. Such institutions can be developed to provide postgraduate training of great value to the general practitioner. Research laboratories and demonstrations devoted to the evaluation of old and new therapeutic methods and clinical concepts about tuberculosis have already been established and will be increased in number. From these efforts it is hoped additional aids will be forthcoming for the physician, not only to control but to eradicate the White Plague within a measurable time.

HERMAN E. HILLEBOE, Medical Director  
Chief, Tuberculosis Control Division  
U. S. Public Health Service

**THE MEDICAL ORGANIZATION AT OAK RIDGE,  
TENNESSEE—SITE OF THE ATOMIC  
BOMB PROJECT**

For many months members of the profession throughout the Northwest have been hearing about the group of physicians from the Twin Cities who had gone to Oak Ridge, Tennessee, to work on a secret project. There were many rumors as to the work that these physicians were carrying on. Since the secret of Oak Ridge and the atomic bomb has been released, the story of the assignment of these physicians can now be told. The trials and triumphs of this assignment represent a decade of medical effort and practice accomplished in a two-year period.

When the Manhattan Engineer District was organized to carry on the secret investigation and production of the atomic bombs, there arose the necessity of a medical organization to take care of the health requirements of all the personnel connected with the construction, operation and research phases of the project. Colonel Stafford L. Warren, then Professor of Radiology at the University of Rochester, was selected by the War Department as the Director of the Medical Section of the Manhattan District with Lt. Colonel Hymer L. Friedell as his executive officer.

In May of 1943, Dr. Charles E. Rea of Saint Paul, Minnesota, was selected as the Chief of Clinical Services for the Oak Ridge Project and was directed to secure his initial staff at the earliest possible moment. Dr. Rea selected nine other physicians from the Saint Paul and Minneapolis area and one physician from the University of Wisconsin. Most of these men came from teaching positions on the University Hospital staff. The personnel of this initial staff is as follows: Lt. Col. Charles E. Rea, Saint Paul; Major W. C. Bernstein, Saint Paul; Major Asher A. White, Minneapolis; Major Joseph M. Ryan, Saint Paul; Major F. L. Bryant, Minneapolis; Capt. E. George Olsen, Minneapolis; Capt. Albert T. Hays, Minneapolis; Capt. Burtis J. Mears, Saint Paul; Capt. G. E. Knutson, Saint Paul; Capt. L. L. Kallestad, Hutchinson; Capt. W. C. Keetel, Madison, Wisconsin.

The first physicians of this group arrived at Oak Ridge on July 1, 1943, and began to organize the medical facilities for the rapidly growing secret city. Within a few weeks all of the original staff were on the scene busily working in the Medical Service Building which had been erected to house the medical unit until the hospital could be built. In this building all pre-employment examinations for operating personnel were done and here all persons requiring medical care were attended to. Patients who were in need of hospital care were taken to the hospitals in Knoxville, some twenty miles distant. During this initial period Preventive Medicine, Public Health, and Sanitation were responsibilities of this group. Equipment was arriving daily, but many makeshift arrangements were made to do the necessary work without the benefit of adequate help, space or supplies.

The first unit of the Oak Ridge Hospital was completed in November of 1943, and the medical staff then moved to their new offices in the hospital building. The original hospital provided beds for fifty patients and office space for only the already inadequate staff. Plans

were made immediately for additions to the hospital and clinical facilities, and through the months that followed the hospital expanded to three hundred beds. A large clinic building was built adjoining the hospital which provided office space for approximately fifty physicians. An additional building was provided to house the Department of Public Health and Vital Statistics. A large institution had been developed and was already functioning within a period of four or five months where no similar facilities had previously existed. Only through the use of the highest priorities from the Army was it possible to obtain so many people and so much equipment in such a short space of time.

The medical staff of the Oak Ridge Hospital was increased regularly as the population of the area mounted. In the summer of 1943, the population of the area was 25,000 persons and in 1944, the resident population was 75,000. Many more thousands lived off the area but worked in the project. As a result of this rapid expansion of the medical program, special arrangements were made with the Office of the Surgeon General so that additions to the staff could be selected through Army channels.

In addition to the Minnesota physicians listed above, the following Minnesota men were subsequently assigned to the Oak Ridge Hospital: Major V. L. Lindberg, Minneapolis; Capt. William Fleeson, Minneapolis; Capt. J. B. Eneboe, formerly of Minneapolis; Lt. R. A. Johnson, Minneapolis; Lt. W. R. Clarkson, Rochester; Lt. H. C. Dahleen, Rochester; Lt. F. E. Donoghue, Rochester; Lt. E. F. Preston, Rochester; Dr. Erick K. Clarke, Minneapolis.

It was necessary to furnish a high calibre of medical service at Oak Ridge. Many of the scientists and research workers had come from outstanding universities at home and abroad and were in a position to be highly critical of medical procedure. The present staff of the Oak Ridge Hospital consists, for the most part, of highly trained specialists from most of the large clinics and teaching schools in the United States.

A clinic type of service fashioned after that which is in use in many of the prominent clinics has been adopted at Oak Ridge and has proven very satisfactory. The medical facility takes care of the large number of military personnel stationed at Oak Ridge as well as the civilian population. The outpatient department handles as many as 20,000 visits per month while the hospital has discharged as many as 1400 patients per month.

When the Oak Ridge Hospital first began to function, the following persons from the University of Minnesota and the Twin City area were on duty: Dr. William B. Holt, Minneapolis (deceased 1944) Hospital Director; Gertrude Gunn, Minneapolis, Record Office; Lucile Halvorsen, Constance Swan, both from Minneapolis; Evelyn Skooglund, Saint Paul, Operating Rooms; Pearl Lemcke, Gladys Thorson, both of Minneapolis, Anesthesia; Mildred Wegener, Mildred Raabe, Edith Young, Zella Hayes, Betty Miller, all of Minneapolis, Nursing; Lila Bengston, Grace Hanson, Virginia Givens, Minneapolis, Public Health; Ellen Newman, St. Paul, Anesthesia.

A prepayment type of medical insurance was worked out after consultation with Dr. Nathan Sinai of the Michigan School of Public Health to which all operat-

ing personnel on the area could subscribe. This plan has worked out very satisfactorily for the hospital and for the subscribers at Oak Ridge. All fees were set up according to the fee schedule prevailing in the nearest center, Knoxville, Tennessee. This insurance plan has been entirely self-sustaining and should prove acceptable to communities of similar size.

Because of the secrecy surrounding the Oak Ridge project and because all procedures were under direct control of Military Security, the medical profession has not had very much information about the medical facilities at Oak Ridge. However, after the Oak Ridge Hospital had been completed and was functioning according to plan, it was visited by officials of the American College of Surgeons and of the American Medical Association. After these investigations, the hospital was fully accredited by the American College of Surgeons and was approved for internships and residencies by the Committee on Education of the American Medical Association.

Minnesota may justly take pride in the part their medical and allied professions have played in making this hospital and clinic one of the outstanding organizations in the country.

WILLIAM C. BERNSTEIN  
F. L. BRYANT

#### CHRISTMAS SEALS

When one considers that the discovery of the tubercle bacillus was first announced to the world on March 14, 1882, by Koch and the fact that there were over 57,000 deaths from tuberculosis in the United States in 1942 and nearly 700 in Minnesota the same year, we realize that the fight against this enemy of man has been long-drawn-out and uphill work. We cannot be too complacent when we learn that the death rate from tuberculosis is one-third what it was twenty years ago.

To learn that tuberculosis is due to an infection was a marvelous discovery. To prevent the infection is still an enormous task and means the detection of those able to spread the infection before the harm is done. Mantoux testing, followed by x-ray of the positive reactors, has proven the best method of detecting early cases of tuberculosis.

There is a tendency on the part of some physicians to minimize the importance of x-ray lung examinations. While it is true that an x-ray examination of the lungs is not the whole story as to the presence or absence of tuberculosis of the lungs, it is the best method for detecting those individuals who should be carefully studied for the presence or absence of active tuberculosis.

The Christmas seal sale each year at this time supports the work of the Minnesota Public Health Association, the main portion of whose activity is fighting tuberculosis. Mass x-ray surveys are coming to be more and more the function of this organization. The sale of Christmas seals needs the support of the profession, as well as the public, if the decline in tuberculosis mortality is to continue to the point of extermination of the disease.

## In Memoriam

### E. V. BATES

Dr. E. V. Bates, a practicing physician at Browns Valley since 1924, died August 6, 1945, at the age of sixty-two.

Dr. Bates was born in Springfield, Nebraska, October 6, 1882. He attended the University of Nebraska and received his medical degree from Drake University in 1909.

He served in the Medical Corps of the Army from 1917 to 1919 and went with the First Medical Corps to France, where he was cited for bravery and received the Distinguished Service Cross for evacuating wounded under heavy fire.

In 1919 he practiced at Wheaton, Minnesota, and in 1924 moved to Browns Valley where he continued to practice until his health failed.

Dr. Bates was a member of the West Central Minnesota Medical Society, the Minnesota State and American Medical Associations. He served as health officer of Browns Valley and took an active part in civic affairs. He never married.

### J. HERBERT BLISS

Word has been received of the death of Dr. J. Herbert Bliss on October 1 in New York; he had been ill for two months. Dr. Bliss was a fellow in surgery and first assistant in radium therapy in the Mayo Foundation from 1923 to 1929.

He was born May 22, 1892, at Clyde, New York. He received the degree of M.D. in 1921 from Columbia University and was an intern at the Methodist Episcopal Hospital in Brooklyn from June, 1921, to October, 1923, at which time he entered the Mayo Foundation as a fellow in surgery. A year later he became first assistant in radium therapy. He left the Mayo Foundation January 1, 1929, to go to Brooklyn where he has since served on the surgical staff of the Methodist Episcopal Hospital.

### JOHN STRICKLER SHRADER

Dr. J. S. Shrader of Lamberton, Minnesota, died suddenly on July 5, 1945, at the age of eighty-eight.

Dr. Shrader was born in Clarence, New York, March 9, 1858. He obtained his medical degree from the University of Michigan Medical School in 1885. He first practiced at Hadley, Michigan, but in 1886 he moved to Delano, Minnesota, where he remained until 1901. He then moved to Springfield.

In 1888 Dr. Shrader married Charlotte McDonald of Minneapolis. After his wife's death in 1926, he retired from practice. A few years later, however, he resumed practice at Hollandale and in various other locations, the past three years in Lamberton.

Dr. Shrader is survived by two daughters, Mrs. Stinchfield, Minneapolis, and Mrs. Bauman, New York.

# MEDICAL ECONOMICS

Edited by the Committee on Medical Economics

of the

Minnesota State Medical Association

George Earl, M.D., Chairman

## AMA HOLDS PUBLIC RELATIONS CONFERENCE

On October 19 and 20, a conference on public relations was held at Chicago by the Council on Medical Service and Public Relations of the American Medical Association. This conference, attended by representatives of all state medical societies, included eight round table discussions: one was held on legislation, one on extension of the EMIC program, another on public relations, and one on placement of medical officers. Other round table discussions were heard on prepaid medical insurance plans, at which A. W. Adson, M.D., of Rochester was moderator; also on rural health problems; on activating the 14-Point Program for Medical Care and Veterans' Administration plans.

In addition to Dr. Adson, the Minnesota State Medical Association was represented by President E. L. Tuohy and Mr. R. R. Rosell, Executive Secretary.

The first day was given over to round-table discussions from which emerged several specific recommendations. They were presented as resolutions the following day for acceptance by the general session, presided over by E. J. McCormick, M. D., Toledo, Ohio, Chairman of the Council. These were acted on separately and referred to the Board of Trustees, to be presented to the House of Delegates at its meeting on December 3.

The Section on Prepaid Medical Insurance, as was to be expected, produced much lively discussion. It was decided that it should meet again in Chicago November 29 and 30 to formulate specific plans for the establishment of a voluntary prepaid medical service program on a national basis to be presented to the House of Delegates.

Major General Paul R. Hawley, Medical Director of the Veterans' Administration, addressed

the conference and asked for the co-operation of the medical profession in developing a program for the disabled veteran.

In his opinion every physician of organized medicine should become a physician of the Veterans' Administration on a fee basis. It is his belief, further, that every disabled veteran should have free choice of physician in his home community, and that it should be left to each state association to develop a good medical program to render out-patient service to which veterans are entitled for service-connected disabilities. Medical care for women veterans, Dr. Hawley pointed out, will be broader in scope and will include medical care for both service and non-service connected disabilities.

He is looking for the best men in medicine, he told the conferees, to become permanently associated with the Veterans' Administration. To take charge of the institutional program, the services of Paul B. Magnuson, M. D., of Chicago, have been secured.

It is his opinion that the only cases the Veterans' Administration is going to be able to care for are the "long-stay" patients—the tuberculous and mentally ill and others who will require hospitalization over long periods. All others, he asserted, should receive medical treatment in their home communities from local physicians.

The importance of concerted action aimed at establishing a uniform and progressive national policy designed to meet the present challenge facing the medical profession on the medical economics and public relations front was at the heart of all discussions in Chicago. State leaders spoke in no uncertain terms their conviction that something must be done and undoubtedly, much was accomplished to pave the way for decisive action when the policy-making body of the AMA goes into session in December.

## NORTH CENTRAL CONFERENCE MEETS IN SAINT PAUL

The North Central Conference again this year held its annual session in Saint Paul on Sunday, November 11. At that time conference members from Wisconsin, Montana, Iowa, North and South Dakota, Nebraska and Minnesota convened to discuss mutual problems in this area. Rural health, prepaid medical service, public relations and plans for the returning medical officers were scheduled on the agenda for discussion. Dr. R. D. Bernard of Clarion, Iowa, President of the North Central Conference, and also President of the Iowa State Medical Society, presided.

## UNITED MEDICAL SERVICE LAUNCHES "ALL COVERAGE" MEDICAL PLAN

As a pioneering venture in medical insurance, United Medical Service Incorporated announced on September 4 the launching of the first all-inclusive medical care insurance plan ever offered in the New York metropolitan area. The new plan comprises a group contract for the provision of medical, surgical and maternity care including after-care in the home and doctor's office as well as in the hospital.

### Trial Period to Test Feasibility

This contract will be limited to a maximum of 2,500 persons already enrolled in groups of fifty or more in Associated Hospital Service of New York until further expansion has been justified on the basis of actuarial experience. The plan is to spread the contracts over as wide an area as possible in the seventeen counties covered by the plan in order that no one physician will be likely to have more than a few subscriber families as patients at this time. United Medical Service now has approximately 137,000 subscribers who are covered by more limited plans with more than 8,000 physicians participating.

### Full Coverage

Contracts for the service which would provide full coverage for families with incomes up to \$2,500 or single individuals with incomes up to \$1,800, will be issued to employers instead of the individual subscribers as in previous plans. Families with incomes above \$2,500, or individuals

whose incomes exceed \$1,800, will be entitled to partial payments against their medical expenses on the indemnity principle.

The rates for the expanded service will be \$1.60 a month for individuals and \$4.00 a month for husband and wife including any number of unmarried children under eighteen years of age. Subscribers will be entitled to one visit a day from a general practitioner up to as many as twenty visits for any one illness, injury or pregnancy case. Additional visits may be authorized. An outstanding feature of the new contract is a provision which entitles subscribers to specific payments up to 50 per cent towards the services of qualified specialists.

United Medical Service will pay the participating physician \$2.00 for each visit from a subscriber to his office and \$3.00 for each visit he makes to the patient at home or in the hospital. For any call received after 8 p.m., the physician may make an additional charge which will not exceed \$2.00 for subscribers in the lower income brackets.

Here again is conclusive evidence of the alertness of the medical profession to the public need for broad medical coverage and of the determination of the profession to satisfy this need. This experiment with complete coverage will serve as a test-tube from which accurate and comprehensive actuarial calculations and conclusions can be secured and will be of great assistance, after sufficient experience has been accumulated, to other states which may contemplate launching out on broader programs than they have at present.

## CONSISTENT SUPPORT OF PREPAID MEDICAL CARE SEEN

Consistent increase in membership marks the medical insurance plans sponsored by county and state medical organizations. This is the outstanding conclusion of the preliminary survey of many of these plans, which has just been completed by the Council on Medical Service and Public Relations of the American Medical Association as reported in the August 18 issue of *The Journal*. For example, Colorado shows an increase of 300 per cent; Wilmington, Delaware, 250 per cent; Massachusetts, 400 per cent; Milwaukee, 1,200 per cent; Kansas City, 300 per cent and two New York plans, 100 per cent. The Toledo, Ohio, plan

has jumped from nothing a year ago to 43,273 subscribers at the present time.

Although these voluntary medical plans have come into nation-wide prominence only recently, the study shows that the movement has gained tremendous momentum during the last year. All indications point to the same steady growth that marked Blue Cross from 1937 to 1945, which now covers some twenty million people.

### "THE INDEX" VIEWS MEDICINE AS BIG BUSINESS

With the nation's medical bill in 1944 totalling \$4 billions, and a capital investment in hospital plant and equipment of \$6 billions, medicine today is one of the big businesses of America, according to the current issue of *The Index*, quarterly publication of The New York Trust Company in a discussion of socialized medicine.

The direct consumers of medical care, the article points out, paid \$3 billions of last year's bill; expenditures by federal, state and local governments were \$800 millions, and the balance was contributed by industry and philanthropy.

Analyzing the relation of national health to output of goods, this report asserts that in 1943, the nation's peak production year, approximately two billion dollars worth of purchasing power was lost because of illness. The male industrial worker lost an average of 11.4 days during the year largely on account of common ailments, and the female worker lost an average of 13.3 days.

"Two hard facts, widely quoted," it continues, "are sufficient to point up the relation that exists between finances and health: (a) for the ten most important diseases in this country, the death rate is approximately twice as high among poorly-paid unskilled laborers as it is among well-paid professional people; (b) the life expectancy of workers in industry is eight years less than that of those who are not employed in factories and mills."

In cost to the taxpayers, the medical aspects of public welfare are of growing importance, according to this study. Ten years ago, \$3.2 billions were invested in hospitals, half of which was subscribed by the government, 45 per cent came from voluntary gifts, and the remainder from commercial sources. Today, tax funds supply some \$200 millions annually for hospital care of mental

diseases alone, a similar amount for the care of the indigent in voluntary hospitals, and \$60 millions for home medical care.

### Trend Toward Socialization Cited

Against the foregoing background of facts and figures, the study looks into the current and probable future trend toward socialization.

"There are many definitions of socialized medicine and its importance appears to depend primarily upon the professional bias, political ambition, emotional inheritance and economic status of the individual. But the crux of all ideas is federal control to a dominating degree."

The bank challenges the belief held in some quarters that more people can receive more benefits from medicine if the profession is socialized. On the contrary, according to the report, experience in foreign countries disproves this belief.

### Federal Control Not Necessary

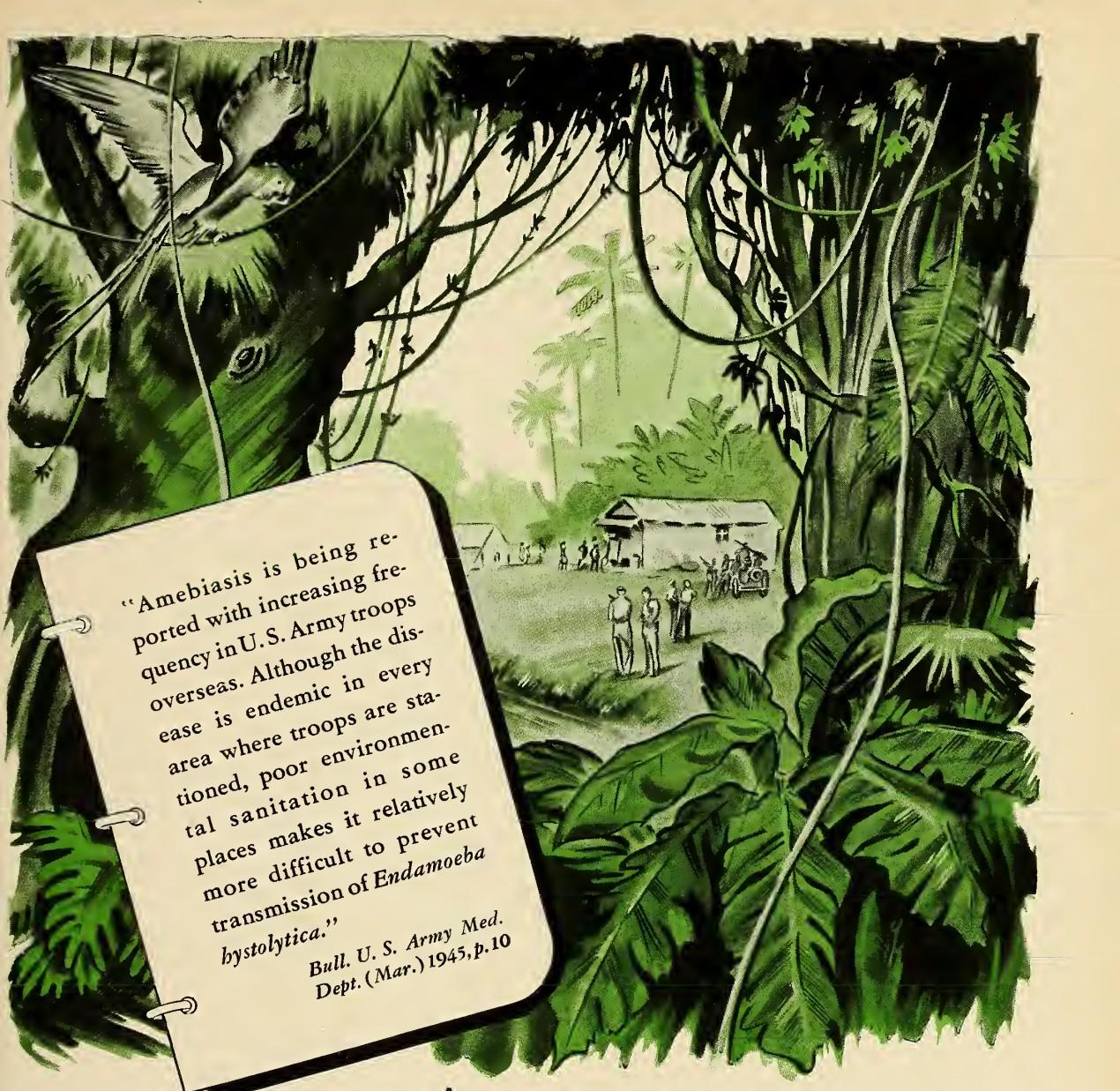
It is the opinion of the bank that voluntary efforts are getting into their real stride. They have not proved a drag on the country's high quality of medical proficiency or the brilliant progress made in research. By expanding and improving our public health service, by supporting various group and community systems, and by encouraging private insurance companies to add to the usefulness of their services, the country should find that federal control of medicine is not necessary to insure a healthy nation, asserts this report.

### KAISER'S PERMANENTE FOUNDATION OPENS ITS DOORS TO THE PUBLIC

A disclosure recently that Henry J. Kaiser's Permanente Foundation Hospital in Oakland, built to provide prepaid medical care for 100,000 shipyard workers, had been opened to the public, threatened to bring repercussions from many quarters.

Under the new program, any person may go to the institution, with its 300 beds, eighty full-time physicians and surgeons, its laboratories, clinics and pharmacies, and apply for complete prepaid medical care. Opening of the hospital to the public came about after some 50,000 shipyard workers had left the yards following the tapering off of employment.

*(Continued on page 942)*



"Amebiasis is being reported with increasing frequency in U.S. Army troops overseas. Although the disease is endemic in every area where troops are stationed, poor environmental sanitation makes it relatively more difficult to prevent transmission of *Endamoeba histolytica*."

Bull. U. S. Army Med.  
Dept. (Mar.) 1945, p. 10

Amebiasis can no longer be considered a "tropical disease"—it has recently been described as endemic in New York as well as in other sections of the country.

## D I O D O Q U I N

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is safe for use whenever amebiasis is suspected, or in preventing transmission through "carriers." Diodoquin can be used in large dosage, by oral



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# SEARLE

RESEARCH IN THE SERVICE OF MEDICINE

## KAISER'S PERMANENTE FOUNDATION

(Continued from page 940)

Criticism of the plan as it now operates have been voiced on two counts by the public: It is expensive; and subscribers have no voice in policy determination.

The President of the California State Medical Association has called a special meeting of the Council to consider the situation. Here again we see demonstrated that social experiments invariably establish patterns of precedent that are seldom reversed. Unfortunately, many of these recent precedents portend a disturbing influence on the system of medical practice in this country.

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## MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

Julian F. Dubois, M.D., Secretary

Chicago Osteopath Pleads Guilty to Fraudulent Advertising in Minneapolis

*Re State of Minnesota vs. Clarence N. McNanly*

On October 15, 1945, Clarence N. McNanly, fifty-two years of age, entered a plea of guilty in the Municipal Court of Minneapolis, before the Hon. D. E. LaBelle, Judge of that Court, to a complaint charging the defendant with fraudulent advertising. McNanly was severely rebuked by Judge LaBelle for his "racket." Judge LaBelle sentenced McNanly to pay a fine of \$75.00 or serve thirty days in the Minneapolis Workhouse. The defendant paid the fine after being told by the Court that a repetition of his offense would result in a straight jail sentence. McNanly stated to the Court that he was returning immediately to Chicago and that he intended to stay there.

McNanly was arrested on Sunday, October 14, 1945, at the Radisson Hotel, Minneapolis, where he was conducting an open meeting for persons who were interested in the subject of "Perfect Vision Without Glasses." McNanly had sent out advance notice to a selected list of chiropractors inviting them to the meeting. McNanly admitted, however, after his arrest by Inspector Bernath of the Minneapolis Police Department, that his true purpose in conducting the meeting was to obtain a suitable number of chiropractors to take a course in the so-called "Bates Method" of treating optical or visual deficiency. McNanly intended to conduct the course on November 10 and 11, at Minneapolis and to charge a fee of \$100 for each chiropractor enrolled in the course. At the meeting McNanly distributed a pamphlet entitled: "Perfect Sight Without Glasses." The pamphlets contained misleading and deceptive statements, and a complaint was accordingly filed against the defendant.

McNanly represented himself as an osteopath with an office at 4643 North Broadway, Chicago, Illinois. He also stated that he was a graduate of the Lindlahr College of Nature Cure, Chicago, and that he holds an Illinois license as an "Other Practitioner," of so-called drugless healing.

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\* *Laryngoscope*, Feb. 1935, Vol. XLV, No. 2, 149-154  
*Laryngoscope*, Jan. 1937, Vol. XLVII, No. 1, 58-60

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# ♦ Reports and Announcements ♦

## MEDICAL BROADCAST FOR NOVEMBER

The following radio schedule of talks on medical and dental subjects by William O'Brien, M.D., Director of Postgraduate Medical Education, University of Minnesota, is sponsored by the Minnesota State Medical Association, the Minnesota State Dental Association, the Minnesota Hospital Association and the University of Minnesota School of the Air.

Nov. 1—5:15 P.M. WCCO	Medical and Vocational Rehabilitation
Nov. 3—11:30 A.M. KUOM-KROC	Medicine in the News
Nov. 7—11:00 A.M. KUOM	Clean Hands are Safe Hands
Nov. 8—5:15 P.M. WCCO	National Pharmacy Week
Nov. 10—11:30 A.M. KUOM-KROC	Medicine in the News
Nov. 14—11:00 A.M. KUOM	Your Teeth Influence Your Whole Body
Nov. 15—5:15 P.M. WCCO	Rehabilitation of the Tuberculous
Nov. 17—11:30 A.M. KUOM-KROC	Medicine in the News
Nov. 21—11:00 A.M. KUOM	Voice and Face Reflect the Personality
Nov. 22—5:15 P.M. WCCO	Rehabilitation of the Hard of Hearing and of the Visually Handicapped
Nov. 24—11:30 A.M. KUOM-KROC	Medicine in the News
Nov. 26—4:45 P.M. WCCO	Your Hospital in Peace-Time
Nov. 28—11:00 A.M. KUOM	Good Eyesight Makes Learning Easier
Nov. 29—5:15 P.M. WCCO	Dental Restorations

## MINNESOTA SOCIETY OF INTERNAL MEDICINE

The Minnesota Society of Internal Medicine met on October 16 in the rooms of the Ramsey County Medical Society in St. Paul, for election of officers. Dr. Reuben C. Johnson, of Minneapolis, is the new president and Dr. Charles Watkins, of the Mayo Clinic, is vice president. Dr. Alex Brown, also of the Mayo Clinic, was re-elected secretary-treasurer.

Dinner was served at the Hotel Lowry and E. C. Richardson, assistant special agent in charge of the Saint Paul office of the Federal Bureau of Investigation, spoke on the part taken by the FBI in the war.

\* \* \*

## WABASHA COUNTY

Lake City physicians were dinner hosts at the Royal Cafe to members of the Wabasha County Medical Society and their wives, on the occasion of the eleventh annual meeting of the Society on October 4.

Officers for the ensuing year were elected and Dr. W. F. Wilson, Lake City, secretary and treasurer, was returned to office for the fiftieth consecutive term. Other officers chosen were: Dr. E. W. Ellis, Elgin, president; Dr. B. A. Flesche, Lake City, vice president; Dr.

(Continued on page 946)



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Osteoporosis  
Protruding Disc

Visceroptosis or  
Nephrophtosis  
with Symptoms

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when operation is to  
be delayed

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Needs

Obesity  
Postural Syndrome

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Hysterectomy  
Nephropexy  
Nephrectomy  
Appendectomy  
Cholecystectomy  
Colostomy  
Cesarean Section  
Herniotomy  
Spinal Surgery

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such as . . .

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Mastitis      Prenatal  
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Each Spencer Support is individually designed, cut and made at our New Haven Plant after a description of the patient's body and posture has been recorded—and 15 or more measurements have been taken. This assures the doctor that each patient will receive the proper design to aid his treatment; that the support will improve body mechanics and will fit with the precision and comfort necessary. Yet a Spencer costs little or no more than an ordinary support.



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is economical because stock solutions may be dispensed quickly and at low cost. Stock solutions keep indefinitely.

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Complete literature will be furnished on request.



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### WABASHA COUNTY

(Continued from page 944)

C. G. Ochsner, Wabasha, censor for three years; Dr. E. C. Bailey, Lake City, was named delegate to the State Association meeting, and Dr. B. J. Boquet, the alternate.

Dr. Frank H. Krusen, of the Mayo Clinic, guest speaker, discussed "Out of Bed—Into Action," illustrated with motion pictures.

The president's address, by Dr. C. G. Ochsner, was "The Use of Vitallium Tubes in Common Duct Reconstruction, with Case Report."

Recent activities of the State Board of Health were covered by Dr. A. J. Chesley, secretary and executive officer.

Dr. B. A. Flesche, recently discharged from the Army Medical Corps, after several years of service, talked on "Some Experiences While in Service."

Late revisions of the Emergency Maternity and Infant Care program for the wives and sick infants of men in military service were reported by Dr. V. O. Wilson, director for Minnesota.

\* \* \*

### WEST CENTRAL MINNESOTA

Attended by the entire membership, the West Central Minnesota Medical Society held a special dinner meeting at the Golf Club House at Morris on October 10, with Dr. Charles Bolsta, of Ortonville, as guest of honor. Dr. Bolsta is retiring after fifty years of practice in Ortonville.

At the conclusion of the dinner, Dr. Herman Linde, of Cyrus, president of the Society, opened the program of the evening with a brief talk on Dr. Bolsta's work. Dr. Clarence Dennis, of the University of Minnesota, one of the guest speakers, was then introduced by Dr. I. L. Oliver. Dr. Dennis's subject was "Pre-operative and Postoperative Care."

Dr. William O'Brien, Director of Postgraduate Education, University of Minnesota, introduced by Dr. Fred Behmier, of Morris, was the next speaker. Dr. O'Brien spoke at some length on Dr. Bolsta's medical career, particularly stressing the importance of his work in behalf of organized medicine in Minnesota.

Dr. Bolsta responded with an expression of his appreciation to the tribute paid to him, and the evening concluded with each one present personally congratulating Dr. Bolsta.

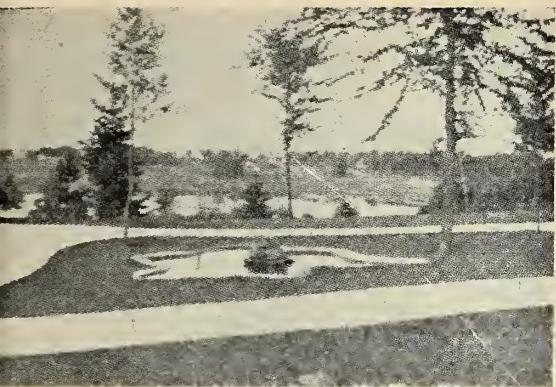
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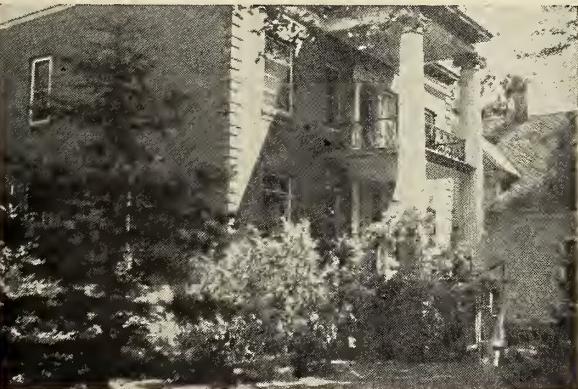
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## WOMAN'S AUXILIARY

MRS. EDWARD V. GOLTZ, President  
Saint Paul, Minnesota  
MRS. JOHN K. BUTLER, Editor  
Carlton, Minnesota

### PRESIDENT'S MESSAGE

We are approaching another year in the history of the Women's Auxiliary to the Minnesota State Medical Association. We stand on the threshold of a new era which offers unlimited opportunities to prove the value of our work as an affiliated member of the medical profession.

The extent of our growth and progress in the coming year and well as in the years to follow will be determined by our ability to keep abreast with the aims and purposes of the medical profession. Each Auxiliary member should dedicate herself now to the study of the many health and social problems awaiting us in the postwar era and should prepare herself to be a leader in her community in these fields. The doctor's wife will be expected to play an even greater role in the future than she has in the past.

As your president, I extend a cordial welcome and greeting and a sincere hope that the coming year will see your efforts as outstanding contributions to the goal which we all hope to attain.

EDITH A. GOLTZ, President

### STATE BOARD

The first State Board meeting of 1945-46 was held in Saint Paul on Thursday, November 8.

### BLUE EARTH COUNTY

Blue Earth County has chosen Mrs. George Penn as president; Mrs. A. E. Sohmer, vice president; Mrs. Roger Hassett, secretary; and Mrs. Philip Hooper, treasurer.

### HENNEPIN COUNTY

Mrs. William J. Byrnes organized the Hennepin County medical Auxiliary in 1910, giving it the unique distinction of being the first chapter to be organized in the United States. The Auxiliary will commemorate its thirty-fifth anniversary at a musical tea and reception for new members at the home of Mrs. Arnold J. Campbell, Rolling Green. Mrs. Harold Stassen will be the guest of honor.

### KANDIYOHI COUNTY

At Hultgren Lodge, Glen Lake, the annual picnic was held with the doctors as hosts. Dr. A. O'Brien talked on "Returning Medical Veterans."

### MOWER COUNTY

Mrs. C. C. Allen was hostess at the September meeting at which the members decided to make cancer dressings and help their local hospital as the year's project.

(Continued on page 950)

## EFFECTIVE ESTROGENIC MANAGEMENT

## Schieffelin BENZESTROL

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The new NESTLÉ'S Evaporated Milk, fed in customary amounts, protects normal infants from rickets and promotes optimal growth. 25 USP units of vitamin D<sub>3</sub> are added to each fluid ounce of this

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- For this delicate task, Solution of Estrogenic Substances, Smith-Dorsey, has won the confidence of many physicians. Smith-Dorsey Laboratories are fully equipped, carefully staffed, qualified to produce a medicinal of guaranteed purity and potency.
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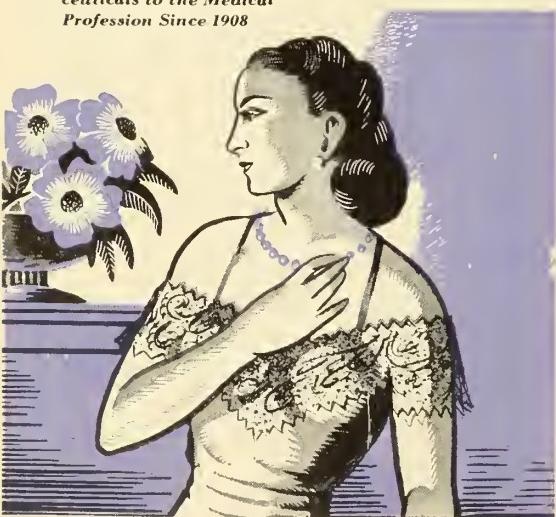
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(Continued from page 948)

### OLMSTED-HOUSTON-FILLMORE-DODGE

The child health project, sponsored by the Mayo Clinic of Rochester, interested many of these members. Mrs. H. M. Keith is president of the board of the Demonstration Nursery School which is part of the project. This school has one hundred pupils enrolled.

Mrs. Keith has also been in charge of the Grey Ladies who trained twenty-seven ladies during the summer and worked 2,460 hours in the hospitals.

Thirty-one nurses' aides have been trained and fifty nurses' aides have worked 3,000 hours in the local hospitals. Mrs. L. M. Randall has had charge of recruiting and organizing the aides.

### PARK REGION

The doctors and their wives met at the River Inn, Fergus Falls, and heard Dr. B. J. Branton of Willmar. The Auxiliary has been 100 per cent active in the Red Cross—knitting, sewing, making surgical dressings and making scrubs.

### RAMSEY COUNTY

Mrs. William Vonder Weyer reports that this summer \$100.00 was donated to the Red Cross Canteen in the Union Station, Saint Paul, to buy homemade cookies for all the soldiers on the hospital trains going through Saint Paul. Twenty members each week all summer supplied homemade cookies at the canteen. Mrs. H. C. Wold was in charge of this project.

The Auxiliary's philanthropic program for 1945-46 includes making dressings for Our Lady of Good Counsel Free Cancer Home, donating \$225.00 for the Red Cross Canteen at the Union Depot as well as augmenting their donations during the year.

### RENVILLE COUNTY

Senator Gage of Fairfax was guest speaker at the September meeting of the Renville County Medical Auxiliary at Olivia, Minnesota. Husbands of members were in attendance at the meeting.

### RICE COUNTY

Mrs. Robert F. Mears of Northfield is president of the Rice County Auxiliary which has thirteen members.

### ST. LOUIS COUNTY

Mrs. M. A. Nicholson entertained the members at her summer home at Pike Lake. The annual budget was presented by Mrs. A. T. Laird of Duluth. The Auxiliary plans to increase its philanthropic work 100 per cent this year, with special attention to the lounge for "up patients" at Nopeming Sanatorium which was furnished by them a few years ago. This year they plan to give current novels, subscriptions to magazines and to buy new records.

(Continued on page 952)

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of Saint Paul

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## WOMAN'S AUXILIARY

(Continued from Page 950)

### SCOTT-CARVER

It is the custom of Scott-Carver Auxiliary to meet with the Medical Society. The September meeting was held at Shakopee. Mrs. P. M. Fisher of Shakopee is president. Members hope that with gas rationing lifted they can become more active.

### SOUTHEASTERN MINNESOTA

Mrs. Donald D. Nealy is president of Southwestern Auxiliary, consisting of twenty-five members from many counties. While wartime restrictions forced them to be inactive, they have nevertheless kept their organization together and are now looking forward to more frequent and productive meetings.

### STEARNS-BENTON

Mrs. C. J. Luckemeyer, St. Cloud, will be hostess for the first meeting of the year. Officers are: Mrs. Joseph B. Gaida, St. Cloud, president; Mrs. Everett J. Schmitz, Holdingford, vice president; Mrs. John Getz, St. Cloud, secretary; and Mrs. T. W. Hovorka, St. Cloud, treasurer. Making afghans for the Red Cross and donating to the cancer program formed their summer project.

### UPPER MISSISSIPPI

Mrs. Callahan was hostess at Ah-Gwah-Ching to the thirty members of her Auxiliary. Mrs. J. A. Thabes, Sr., of Brainerd, presided.

### WASECA COUNTY

There are only six members in this chapter, but they are very busy. This month they met at Mrs. A. J. Swenson's home to make new sheets for the hospital.

### WASHINGTON COUNTY

Mrs. F. A. Stevens of Lake Elmo entertained at a pot-luck luncheon and social hour. Mrs. D. Kalinoff, Mrs. John W. Stuhr and Mrs. F. M. McCarten are the officers.

### WINONA COUNTY

Winona County Auxiliary meets four times a year on the first Monday of the month. Mrs. F. T. Benoit is president.

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A Modern Private Sanitarium for the Diagnosis, Care and Treatment of Nervous, Mental and Medical Cases Located on beautiful Lake St. Croix, eighteen miles from the Twin Cities, it has the advantages of both City and Country. Every facility for treatment provided, including recreational activities and occupational therapy under trained personnel. Close personal supervision given patients, and modern methods of therapy employed. Inspection and cooperation by reputable physicians invited. Rates very reasonable. Illustrated folder on request.

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NOVEMBER, 1945

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**FORT WAYNE, INDIANA**

## ♦ Of General Interest ♦

Dr. Gordon New, Mayo Clinic, has been in New York City, where he attended a meeting of the American Society of Plastic and Reconstructive Surgery.

\* \* \*

Dr. Joseph F. Borg has announced the reopening of his offices at 918 Lowry Medical Arts Building, Saint Paul, Minnesota. His practice is limited to internal medicine.

\* \* \*

Announcement has been made of the promotion of Captain Thomas Byrd Magath, Rochester, to commodore in the Medical Corps of the United States Medical Reserve.

\* \* \*

Dr. Arthur Martin Olson, Mayo Clinic, has been in Washington, D. C., for a meeting of the Committee on American Registry of Pathology, Division of Medical Sciences, National Research Council.

\* \* \*

Two Minnesota physicians were among the twenty-four doctors landed at La Guardia Field from the European theater on September 24, prior to discharge from the army. They were Captain Herschel Kaufman, of Minneapolis, and Captain Albert E. Krieser, of Mankato.

\* \* \*

Dr. Frank H. Krusen, of the Mayo Clinic, has returned from Washington, D. C., where he presided at the joint meeting of the Scientific Advisory Committee and the Committee on War and Postwar Physical Rehabilitation and Reconditioning of the Baruch Committee on Physical Medicine.

\* \* \*

At the fall meeting of the Minnesota Society of Internal Medicine, held in Saint Paul, October 15, Dr. Reuben C. Johnson, of Minneapolis, was elected President, Dr. Charles Watkins, of Rochester, Vice President, and Dr. Alex Brown, of Rochester, Secretary-Treasurer (re-elected). The next meeting of the Society will be held in Duluth in June, 1946.

\* \* \*

Major Oram R. Lawry, Jr., formerly of Portland, Maine, and on assignment in internal medicine and medical specialties in the Mayo Foundation from September 23 to November 12, 1944, was recently commended by the commanding officer of the 65th General Hospital for his clinical work with that medical unit. He entered the service in July, 1941.

\* \* \*

Dr. and Mrs. James C. Crabtree, Jr., with their two-year-old son, are now settled in their new home in Starbuck, where the doctor will engage in general practice. Dr. Crabtree, a graduate of Tulane University, New Orleans, has been in residency for the past eighteen months at the Northern Pacific Hospital in Saint

Paul. He served his internship at Hillman Hospital, Birmingham, Alabama.

\* \* \*

Announcement has been made of the resignation of Dr. Stephen Baxter from the Minneapolis Board of Public Welfare. Dr. Baxter's resignation followed the refusal of the majority of the Board to support the recommendation of Dr. D. W. Pollard, superintendent of the General Hospital, for dismissal of an orderly for striking a mental patient in the psychopathic ward.

\* \* \*

After an absence from his practice of five years, Lt. Colonel Richard B. Hullsiek has returned to Saint Paul and has reopened his office in association with his brother, Dr. Harold Hullsiek.

Inducted into the Army Medical Corps in 1940, Colonel Hullsiek served as State Medical Director for Selective Service for two and a half years. For the past two years he has been in the European theater. Recently he had been with the Eighth Convalescent Hospital, with General Patton's Third Army, and later with the Ninth Army in Germany.

\* \* \*

Since reporting Dr. A. M. Ridgeway, of Annandale as the oldest practicing physician in Minnesota, both in age and term of service, MINNESOTA MEDICINE has been informed that Dr. Albert Walker, of Duluth, opened his offices there in the summer of 1890 and has been in continuous practice ever since. So he, too, has completed fifty-five years of medical service.

Dr. Walker, who will be eighty-three on December 3, graduated from the University of Western Ontario, London, Ontario, in 1888, and from Bellevue Medical College in 1889. With Mrs. Walker, he celebrated the fiftieth anniversary of their marriage last August. Their son, Major Arthur E. Walker, is post surgeon at the Umatilla Ordnance Depot, Umatilla, Oregon.

\* \* \*

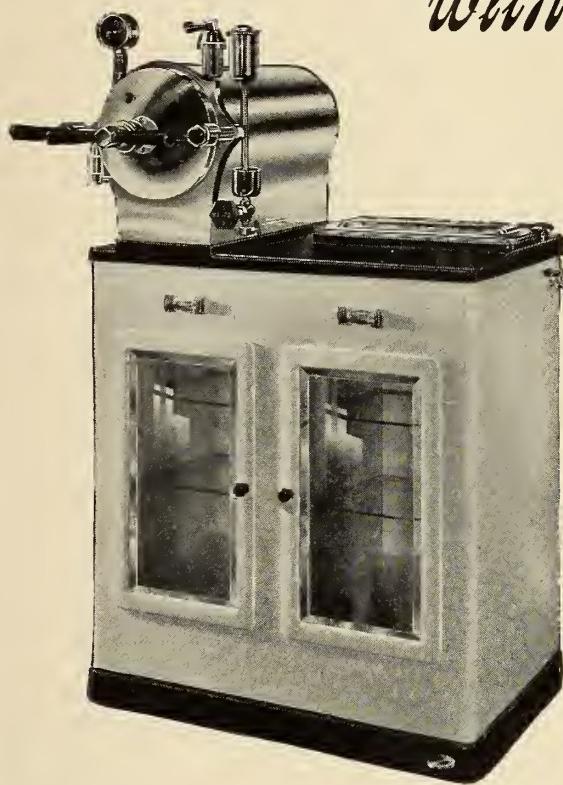
With the closing of his offices at Grand Rapids in September, Dr. H. E. Binet terminated almost thirty years of medical practice in the Range area. Dr. Binet graduated from Northwestern University in 1916, but he had previously attended the University of Minnesota. Immediately following his graduation he returned to his native Grand Rapids, and began his practice in association with Dr. M. N. Hursch. He is a veteran of World War I, where he served in the Army Medical Corps.

First president of the Range Medical Society, Dr. Binet is a fellow of the American College of Surgeons, and a member of the Minnesota State Medical Association and the American Medical Association.

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(Continued on page 956)

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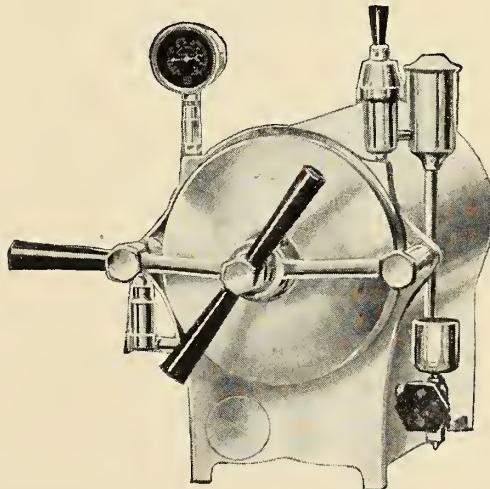


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(Continued from page 954)

sion have left Dr. Binet little time for leisure pursuits, so he is retiring while still young enough to enjoy doing things long planned, but which he has never found time to begin.

\* \* \*

The growing importance of Minneapolis as a medical center was stressed by Dr. James K. Anderson, retiring president of the Hennepin County Medical Society, in an address at the installation of the new officers on October 1. Figures quoted by Dr. Anderson, compiled from a questionnaire sent to hospitals, wholesalers and manufacturers of drugs, lenses, artificial limbs, surgical supplies, show that medical care in Minneapolis is a \$16,000,000 industry. During the past year 28,000 out-of-town patients were cared for in hospitals in the city, while an additional 39,000, not requiring hospitalization, were treated by Minneapolis physicians. During the year 88,388 hospital patients required professional and nonprofessional service from 3,421 persons, representing a payroll of \$4,079,000. Medical supplies sold to hospitals by Minneapolis business houses totaled \$3,201,000.

\* \* \*

The Legion of Merit was recently awarded to Lieutenant Colonel Isidore A. Feder, formerly of Brooklyn, New York. He was on assignment in internal medicine and medical specialties at the Mayo Foundation from July 3, to August 31, 1943. The citation accompanying the award read "For exceptionally meritorious conduct in the performance of outstanding service, as chief of medical service of the 45th Evacuation Hospital from August 2, 1944, to May 10, 1945. Lieutenant Colonel Feder made many recommendations on the treatment of battle casualties which have been adopted throughout the Ninth United States Army. The skill and dispatch with which he organized a tuberculosis service in Buchenwald at the notorious German concentration camp rapidly relieved a critical epidemic risk at that institution. The judgment and devotion to duty displayed by Lieutenant Colonel Feder reflect highest credit on himself and on the armed forces of the United States." He entered the service on August 12, 1942; he is recipient of the Bronze Star.

\* \* \*

The Hennepin County Medical Society has announced the return to practice on October 1 of the following Minneapolis physicians:

Dr. Harlan Alexander—offices in the Physicians and Surgeons Building. A captain in the Army Medical Corps, Dr. Alexander entered service in 1942. He was battalion surgeon in the invasions of Attu, Kwajalein, Leyte, and Okinawa, and was awarded the Bronze Star and the Oak Leaf Cluster.

Dr. Robert N. Barr has returned to his position as director of local health in the State Department of Health. A lieutenant colonel, Dr. Barr entered service in February, 1942, and was on duty in New Caledonia and Guadalcanal for thirty-two months.

Dr. Ralph Creighton—offices in the Medical Arts

Building. Inducted into the Army Medical Corps in January, 1941, he served as medical officer in the Thirtieth Division and Headquarters of the Second Corps in Ireland, England, Scotland, Africa, Sicily and Italy. His rank at retirement was lieutenant colonel and he wears the Bronze Star and six Battle Stars.

Dr. Paul R. Gronvall, lieutenant commander in the Navy, was commissioned in December, 1943, and served in the European theater. His offices for the practice of surgery are in the Medical Arts Building.

Dr. Solomon E. Horowitz, dermatologist and allergist—offices in the Medical Arts Building. A captain in the Army Medical Corps, Dr. Horowitz was inducted in July, 1942, and served in Africa, Italy and France.

Dr. Frank L. Kavanor, eye, ear, nose and throat specialist—offices in Medical Arts Building. A reserve officer of World War I, Dr. Kavanor was commanding officer of the station and camp hospitals in this country, with rank of full colonel.

\* \* \*

Dr. J. J. Ederer, formerly of Mahnomen, Minnesota, has disposed of his practice there and is now living in Minneapolis (Morningside). The Mahnomen Hospital, which Dr. Ederer has operated for a number of years, was purchased on October 15, 1945 by the Sisters of St. Benedict.

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## Neuro-Surgical Cases

(Continued from page 919)

patients died. One individual had a cerebral concussion, skull fracture, intracranial shell fragments, a brain abscess, meningitis and bronchopneumonia. Operation was performed elsewhere and at this hospital. The second death occurred in an individual who had had a severe cerebral concussion, a skull fracture and a diffuse subdural hemorrhage. The third individual who died had a severe concussion and a subdural hematoma found at autopsy. Death occurred thirteen hours after injury.

6. The fifty-two nerve operations consisted of fourteen formal nerve sutures, two nerve grafts, twenty-three neurolyses, two neurectomies, three Hershage procedures, three in which intraneuronal foreign bodies were removed, two sympathectomies and three scalenotomies.

7. Ten patients were operated upon with a diagnosis of "prolapsed nucleus pulposus." One of these cases presented a negative exploration. Seven of the patients had satisfactory relief of pain, but only three returned to duty from this hospital.

## RADIO TUBERCULOSIS PROGRAM

The role of the family doctor in tuberculosis control is the subject of a series of thirteen broadcasts, called "The Constant Invader," which will be presented on WCCO and other Minnesota radio stations this fall.

The series, which represents the first major, nationwide effort of the National Tuberculosis Association to use radio as a channel for health education, deals with the various phases of tuberculosis control. It is sponsored by the Christmas Seal organizations of the state.

On WCCO, the first program was presented at 4:45 p.m., Saturday, November 3. "The Constant Invader" will be heard at the same hour every Saturday through January 26.

Dr. A. J. Cronin, author of "Hatter's Castle," "The Keys of the Kingdom," and "The Green Years," is the narrator of the series.

One program deals with the advances in medicine and surgery in the treatment of tuberculosis.

The program on the family doctor tells how one physician solved the mystery of positive reactions among members of a typical family and saw to it that the ill member of the family went immediately to a nearby sanatorium.

A program devoted to medical research dramatizes the long-range experiments of Professor Rudolph Anderson of Yale University on the chemical analysis of the tubercle bacillus.

Other subjects, included in the series are: the ways in which community agencies work together toward the solution of the TB problem, the work of the public health nurse in a rural community, the necessity of tuberculin testing in schools, the "hows" of an industrial x-ray survey, the necessity of examining family contacts, modern sanatorium care, a typical college health program, TB as a problem among old people, the value of rehabilitation, and the "hows" and results of health education.

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# Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 28

December, 1945

No. 12

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# Minnesota Medicine

*Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society*

Volume 28

December, 1945

No. 12

## JAUNDICE—A METHOD OF DECIDING WHERE SURGICAL TREATMENT SHOULD SUPPLEMENT MEDICAL CARE

JOHN J. FEE, M.D., and E. L. TUOHY, M.D., F.A.C.P.

Duluth, Minnesota

THIS report catalogues the results of an attempt to find better methods of selecting the cases of extrahepatic regurgitational jaundice that should have the benefit of supplemental surgery; conversely, to spare the numerous individuals with intrahepatic jaundice (hepatitis or hepatosis) from additional trauma, the result of the surgery and associated anesthesia. Medical and dietary regimen are now available which greatly expedite the liver's natural tendency to recovery from all varieties of insult except malignant invasion. Surgeons have greatly profited thereby in terms of pre- and postoperative medical care of these patients. It is apparent, furthermore, from current reports\* that surgeons must now master the newer techniques of partial or complete pancreatectomy (chiefly for cancer of the head of the pancreas or ampulla of Vater). Exploration simply to establish the diagnosis, without any attempt to restore bile flow to the intestines, has very little to recommend it. Furthermore, it is not enough to know, in the presence of jaundice, that there is demonstrable disease (Graham-Cole positivity) within the gall bladder or even the common duct. We are prepared to show that some such are casual concomitants; and closer inspection of the diagnostic patterns or profiles available after a grouping of the blood, urine and stool tests we are

outlining would have ruled against surgical interference at that particular time.

### Circulation of Bilirubin and Watson's Great Diagnostic Contribution

Tests of liver function have been as numerous as knowledge develops concerning the purposeful metabolic processes in which that organ is shown to have a part; each proven liver cell adaptation (and there are many) proffers another test of liver cell capacity. A good example is the recommendation of Lord and Andrus<sup>5</sup> made soon after the discovery of vitamin K. They proposed that the prothrombin response to vitamin K, after oral or parenteral administration, offered "a key test" of liver efficiency. That appears to be the routine method whereby most liver tests have been developed. Lichtman<sup>4</sup>, to whom we shall frequently refer, in Chapter VIII of his book devotes Pages 249 and 343 to a description, analysis and evaluation of over fifty individual tests, and at the end of the chapter adds 312 references. Considerable sympathy, but not support, may therefore be extended to the competent surgeon who has been heard to exclaim, "The icterus index is the only understandable measurement I need." It must be agreed by everyone that it rapidly became a great and simple screen with which to measure the degree and rise or fall of bilirubinemia. The bromsulphalein dye test (the prototype of the phenolsulphonphthalein test of the urine for kidney function), recognized as an excellent test in

From the laboratories of St. Mary's Hospital and the Dept. of Int. Med., The Duluth Clinic, Duluth, Minnesota.

\*Those interested in the surgical techniques should read the articles by Allen O. Whipple<sup>12,13</sup>, of New York, and Clarence Dennis<sup>2</sup>, of the University of Minnesota. O. T. Clagett<sup>1</sup>, of the Mayo Clinic, has several successful partial or complete pancreatectomies to his credit.

liver disease without jaundice, obviously technically is of little value in the field of this discussion.

However, after Watson<sup>9,10</sup> reported his studies on pigment metabolism the jaundice puzzle lost much of its terror and confusion. Unfortunately, hospital staff men and clinical laboratories have been very slow in coming to an understanding of Watson's fundamental approach with exact methods of finding out where a block arises in a natural transmission of bilirubin from the extrahepatic breakdown of red cells by the reticulo-endothelial cells, through to the exit of bile via the common duct into the duodenum. Then he proceeded to demonstrate the capacity of the liver to reabsorb or accept some portion of the urobilinogen arising from the breakdown of bilirubin in the intestines; and if the liver cells are not able to do so their degree of dysfunction is reflected in the amount of urobilinogen appearing in the urine. The collection of a twenty-four-hour specimen of urine to get the quantitative output of urobilinogen has been easily accomplished; but Watson's original collection of the stools over a four-day period, in order to get a suitable average, posed a difficulty which seemed too time-consuming to the surgeon (now having vitamin K to counteract the usual danger of hemorrhage), and between the nurse and the patient, all too frequently, stools got to the sewer instead of to the laboratory. As a result, for nearly ten years a consistent laboratory study of jaundice patients languished in a desultory use of Watson's most helpful quantitative stool and urine estimations. Recently, this method has been changed and modified both by Watson and by others. Steigman and Dyneiwicz<sup>8</sup> have recently given complete support to the conclusions drawn by Watson; and they have simplified the stool assembly by working with exactly weighed specimens of stool and estimating the urobilinogen quantitatively in terms of 100 grams of stool. Recently, Watson<sup>11</sup> has used a similar simplification and somewhat altered the laboratory technique, but it has made no change in the extreme validity of the procedure. He refers to these smaller samples often taken for recheck, as "random stools."

This lag of approximately ten years after Watson's first report is stressed because it is certain that other observers have fared no better than one of the authors (E.L.T.) who, for this intervening period of years found that each occasion where the method was desirable and asked for, St. Mary's Hospital clinical laboratory personnel had perforce

TABLE I. JAUNDICE CASES—ONE-YEAR STUDY\*

St. Mary's Hospital, Duluth, Minnesota

<i>Types</i>	<i>Number</i>
Hepatitis (osis)	
(a) Chemical .....	30
(b) Catarrhal jaundice .....	1
(c) Infectious (biliary) .....	1
(d) Cirrhosis of liver .....	4
Cholecystitis .....	4
Cholelithiasis	
(a) Gall bladder.....	4
(b) Common duct .....	4
Carcinoma	
(a) Ampulla of Vater .....	1
(b) Liver ducts .....	1
(c) Gall bladder .....	2
(d) Head of pancreas .....	4
(e) Liver metastasis .....	1
Mechanical (postoperative) .....	2
<i>Total</i> .....	56

\*From that assortment, ten illustrative cases are chosen for comparative summaries of the chosen laboratory tests.

to redevelop its interest, reorganize its solutions and technique, only to lose interest later with new groups of interns and laboratory technicians. This study and plan was an outgrowth of the intensive effort of one of the authors (J.J.F.), a former student of Dr. Watson's who, first as an intern and later as a resident, instilled into the clinical laboratory and its staff an enthusiasm and interest which culminated in this review for the year 1944. It has worked out admirably; and when the laboratory technicians are made a part of the consulting team and made to feel that the multiple tests asked for are not whimsical endurance mazes, they promptly share the clinician's enthusiasm over the inspiring diagnostic accuracy that results. These results have been tested three ways: the natural procedure to recovery of all the cases listed under "infectious hepatitis"; the discovery of stone in the common duct where it was surmised; the finding of cancer, either in the head of the pancreas or in the ampulla of Vater, determined either at operation or at autopsy, or both.

#### Material Studied: Additional Tests Chosen

Fortunately, the year 1944 had a minor epidemic of so-called "infectious jaundice" in the Duluth vicinity. Table I lists the fifty-six cases; thirty-two that are thus loosely subdivided, with one other definitely traced to drugs. While these patients were in the hospital there was a fortunate concurrence of nine cancer cases, as shown in the charts, and eight in which the site of stone was found equally as between the gall bladder and the common duct. The other laboratory tests or checks decided upon were selected from those favorably mentioned in the current literature, and admirably

discussed and assembled in Lichtman's book. He has this to say in his introductory remarks opening Chapter VIII on liver function tests and the search for "an all-encompassing miracle test" that would suffice to differentiate all jaundice. He writes, "The van den Bergh reaction promised at first to fulfill this demand. An intimate knowledge of the manifold functions of the liver, however, precludes the realization of this dream." He adds that multiple tests in different phases of the disease will lead to satisfactory appraisals. Those interested should read this chapter; it is full of interest and common sense. For example, it is now necessary to bring into our routine diagnostic consciousness an interpretation of the van den Bergh test, including quantitative estimates of that portion remaining in the blood which has not been acted upon by the liver cells (the hemobilirubin); and that portion which has passed through the liver, undergoing some structural change, and is then reabsorbed into the blood from the liver ductal system (the cholebilirubin). These have been known previously as "the indirect and direct van den Bergh." The newer classification is much better and properly orients the procedures. We have, therefore, included the quantitative estimation in the blood of the hemobilirubin and the cholebilirubin. It must be understood that this test is of particular value in hemolytic jaundice (acholuric), but we are not including that issue in this discussion. A better understanding of the meaning of the level of the quantitative bilirubin will result from careful analysis of the case reports which follow.

There seems in the literature also to be considerable evidence that blood determinations of the blood cholesterol and of the alkaline phosphatase, measured in King-Armstrong units, offer a distinct help in differentiating intrahepatic from extrahepatic biliary obstruction. Roberts<sup>7</sup> suggested the study of plasma levels of the enzyme phosphatase† as another indication or aid in separating obstructive from infectious jaundice. There is also conclusive evidence that in severe liver damage there is a distinct drop in that portion of the cholesterol known as "cholesterol esters." While we have not been able to provide in Table II all these determinations in every case, we feel that the composite profile, rather than any individual reading, is what counts. It is not always pos-

sible to include every test. Quick's<sup>6</sup> test for determining the ability of the liver to synthesize hippuric acid from benzoic acid has stood up against all critics. Unlike the estimation of the cholesterol esters it presents few technical difficulties. Benzoic acid can be introduced intravenously if the patient is vomiting. Hanger's flocculation test<sup>3</sup> has one great factor of simplicity: where negative it lends assurance of a normal liver.

From this point on we ask the reader to be patient in reading the abbreviated histories of ten cases as outlined in Table II. Where interns, quite unfamiliar with the background of Watson's studies and tests, have sat down in front of these profiles and patterns, and have been told the purpose of this collective study and checking, they have invariably made the right deduction and diagnosis.

### Résumé of Ten Cases

*Case 1.*—A white woman, aged thirty-five, gave a history of taking tablets (cinchophen), followed by jaundice. Referring to Table II (as in all these cases) note first the high icterus index, which dropped from 79 units to 27.2 in a three-day period. Next notice that the cholebilirubin was much less than 75 per cent of the total bilirubin in the blood, which is the usual circumstance where the obstruction is extrahepatic. While the studies on urobilinogen were incomplete, note that the two levels found in the twenty-four-hour urine, three days apart, and the one reading on the feces output for twenty-four hours, were of the amount found in total obstruction, as in cancer. Note, however, that the alkaline phosphatase was within normal limits, and both the Hanger and the hippuric acid values denoted diffuse liver disease. We were certain, therefore, that the diagnosis was toxic (retentional) jaundice. She was treated on that basis, and recovered promptly on a high carbohydrate, high protein, low fat, high vitamin diet, reinforced with powdered skim milk and brewer's yeast.

*Case 2.*—A white man, aged fifty, gave a history of painless jaundice which began four weeks previous to admission to the hospital. Notice here that the icterus index was 98, and the great preponderance (over 75 per cent) of cholebilirubin over hemobilirubin, meaning that bile had passed through the liver cells and was being reabsorbed from obstruction lower down. Note further from the table that whereas the blood cholesterol and cholesterol esters were undisturbed the alkaline phosphatase was very decisively elevated from the normal level of 4 to 14, to 47.1 King-Armstrong units. Furthermore, in keeping with the relatively intact liver was the negative Hanger test and very slight diminution in hippuric acid synthesis. Therefore, our diagnosis was cancer of the head of the pancreas. This was found at operation, and a cholecystoduodenostomy was performed. This gave him six months of reasonable comfort. At autopsy primary cancer of the head of the pancreas,

†It seems just as well to evade concern over the biochemical background of these serum changes. These checks are only medical weather vanes, and share with the Wassermann tests peculiar and intricate variations in tissue fluids and the blood serum.

TABLE II. TESTS FOR JAUNDICE DIFFERENTIATION

	Case #1 F. Age 35 Toxic Jaundice	Case #2 M. Age 54 Ca. Head of Pancreas	Case #3 F. Age 7 Cataract Jaundice	Case #4 F. Age 74 Stone in Common Duct—2 yrs.	Case #5 F. Age 61 Common Duct Stone	Case #6 M. Age 68 Ca. of Pancreas	Case #7 F. Age 80 Liver Damage Not Ca.	Case #8 F. Age 50 Intermittent Jaundice Ca. Ampulla	Case #9 Pregnancy With Hepatitis	Case #10 Cholelithiasis and Hepatitis
Normal										
Icterus Index 10 units	73 U *27.2 U	98 U	33.3 U	16.0 U	58.0 U	72.70 U 120.0 U	108 U 111 U 37 U	8.3 U 7.5	24.4	38
Cholebilirubin 0 Mg. %	7.3 0	3.6 11.1	4.80	3.1	7.60	10.4 10.9	11.1		2.0	5.8
Hemobilirubin	4.2 .25	1.7 .8	.60	20	.96	0.93 1.0	1.09		0.4	0.45
Urine Urobilinogen less than 3 mg./ 24 hrs.	0.6 1.17	0.0 0.0	0.00 0.99	4.0	4.50	.36 .29	11.08 1.1	0 1.1	0.40	1.08
Feces Urobilinogen 30-150 mg./100 gms.	0 .15	0.0 45.0	0.00	32.0	75.0	0.00 0.7	49.8 2.03 2.31		51.4	150
Total Cholesterol 150-200 mg. %	—	143	274	308	253.0	277	—		165	152
Cholesterol Esters 50% of total	—	80	231	57	—	—	—	35	—	—
Alkaline Phosphatase 4 to 14 units King Armstrong	10.6	47.1	16.9	39	26	123	17.9	58.2	11.3	31.1
Hangers 0	4+	Neg.	2+	Neg.	Neg.	4+	Neg.	4+	4+	
Hippuric Acid 3 gms. excreted in 4 hrs.	0.6	2.29	—	1.90	3.75	2.98	1.02	—	1.18	2.3

\*Where double entries are scheduled the second represents a 3- or 4-day, later interval.

—Indicates test not done.

with extensive liver metastasis, was proven. We have no hint as to why the cholesterol levels are not disturbed. This strongly attests the value of "multiple checks."

*Case 3.*—A white girl, aged seven, had a three-day history of nausea and vomiting, which was followed by a gradually increasing jaundice. The icterus index gave 33.3 units, a cholebilirubin again over 75 per cent of the total bilirubin in the blood. Note again the extremely low levels in the first twenty-four-hour check of the urine and stool urobilinogen, and a very prompt elevation of the latter when the test was repeated five days later. This illustrates one of the objections that was brought against Watson's technique of quantitative studies in the earlier years. It was found then, and we know now, that in the early stages of acute catarrhal jaundice (hepatitis) the urobilinogen levels, urine and stool, are as low as found in cancerous obstruction. In contrast to cancerous obstruction, however, the levels do not remain depressed very long; the liver soon re-establishes function except, probably, in those instances of extreme damage, as in fatal acute yellow atrophy. The total cholesterol and cholesterol esters are elevated, as in extrahepatic obstruction, but the alkaline phosphatase remains approximately normal. In this instance the hippuric acid test of Quick was not performed, and the Hanger showed only two plus. This child was one of a considerable number of cases of hepatitis or "acute catarrhal jaundice" occurring in this community at the time of this study. All these patients have received practically the same dietetic regimen, so that that factor has been well controlled. We have had no fatalities nor severe sequelae in this group of acute hepatitis.

*Case 4.*—A white woman, aged seventy-four, came with a two-year history of jaundice. We grant that the history was extremely suggestive of the diagnosis ultimately made of stone in the common duct. However, she was in the cancer age and had the appearance of having a malignancy. In any case, the length of time that she was sick and the moderate elevation in the icterus index (16 units) connoted the probability of incomplete obstruction to the flow of bile. Note the cholebilirubin again heavily preponderating over the hemobilirubin; the total urine urobilinogen in twenty-four hours only slightly more than normal, but the stool at 52 mg. per cent, much too high for cancer. Then appears the total cholesterol decidedly elevated and the cholesterol esters definitely less than 50 per cent, thereby speaking for considerable liver damage. In keeping therewith is the considerable reduction in the hippuric acid synthesis from the normal level of 3 grams to 1.9. For some unknown reason the Hanger test registered entirely negative. The sum total of evidence here pointed to stone in the common duct (stones were visualized in the gall bladder by the Graham-Cole test). Considerable fibrosis and scarring of the liver was surmised. That is exactly what was found at operation. She was given adequate pre-operative and postoperative preparation on a modification of Patek's diet, and she made an excellent recovery.

*Case 5.*—This, briefly excerpted, is that of a white woman, aged sixty-one, with a history of eleven years

of repeated attacks of cholecystitis, with recurring bouts of jaundice, accompanied by extreme wasting and marked itching of the skin. The reader will notice that the laboratory test profile is essentially the same as for the previous case except for the absence of liver damage, as indicated by a quite normal hippuric acid synthesis (3.7 grams), but with about the same totals of urine and stool urobilinogen as in the previous case. The alkaline phosphatase was not so markedly elevated. At operation a large stone was found in the common duct. The liver was quite normal, and she made an uneventful recovery.

*Case 6.*—This man, aged sixty-eight, gave a history of only three weeks of painless but rapidly developing jaundice. Note how closely in this case of equally proven cancer of the head of the pancreas the laboratory record resembles the profile of Case 2. In the first place, in contrast to simple catarrhal jaundice, toxic in nature, as in Case 1, the icterus index mounted from 72 to 120 units within a matter of four days. Observe again how the cholebilirubin greatly preponderated over the hemobilirubin, and the urine and stool studies for twenty-four-hour specimens remained fixed during the entire period of study, remaining at the very characteristic level of cancerous obstruction. There were also the characteristic elevation in cholesterol to 277 milligrams per cent; the cholesterol esters were not estimated. Observe that the alkaline phosphatase was very decisively elevated, and in our experience it would seem to mount to these high levels in situations where the icterus index rapidly advances and the course of the disease is short. The Hanger and the hippuric acid would both connote a relatively normal liver. All these surmises were established at operation.

Such instances as this indicate that if and when we can make early enough diagnoses of cancer of the head of the pancreas and surgeons have adequately built up their technique, capably supported by proper anesthesia, satisfactory pre-operative preparation and post-operative followup, the closely associated organs (liver, stomach and duodenum) will no longer bar the removal of the pancreas in part or whole. In fact, this is already being accomplished by surgeons capable in this field.

*Case 7.*—This is an instance of a white woman, aged eighty, presenting a six months' history of gradually increasing jaundice. Surgical exploration was vetoed only after considerable argument and close reference to the laboratory profile exhibiting rather decisive liver damage. In the first place, note that in a succession of estimates of the icterus index the unitage dropped from 108 to 37 within a period of observation of about ten days. The cholebilirubin remained at the level of great excess over the hemo, indicating extrahepatic obstruction, or possibly at a "pericholangitic" level. The urine urobilinogen, however, at 11.08 begins to throw the evidence toward diffuse liver damage, whereas the stool urobilinogen at 49.8 milligrams per cent is too high for cancer either in the pancreas or in the ampulla of Vater. Cholesterol studies were not made but the alkaline phosphatase, at 17.9 King-Armstrong units, did not support the surgeon's contention that he should explore with the expectation of finding stones. The Hanger test came

## JAUNDICE—FEE AND TUOHY

to the rescue, however, with four plus positivity, and the hippuric acid synthesis was down to about one-third of normal.

While we were in the throes of studying this situation pro and con the kindly octogenarian improved rapidly without operation and is now quite well. She thinks our studies were well worth while. We were not able to rule out the possibility of cholecystitis in her background, but even if she had it her age alone should rule out other than emergency surgery.

*Case 8.*—This white woman, aged fifty, well illustrates the diagnostic difficulties involved in recognizing cancer in the ampulla of Vater. She had had somewhat vacillating attacks of jaundice for a period of six weeks. Surgical exploration for common duct stone was first carried out in the early months of 1943. The surgeon reported that he found nothing indicative of pancreatic invasion but "the common duct was full of goo." He was able to probe down into the duodenum, the gall bladder was removed and the duct drained. She improved for about three months. Then followed a period of extreme nervousness and a diffuse distress, seen not infrequently with cancer of the body of the pancreas unaccompanied by jaundice. Three months later, however, she had very definite jaundice, and eight months after the first operation re-exploration was decided upon. This time the liver was studded with metastases, and it was reported that "the head of the pancreas seemed a little hard." It is unfortunate that a complete autopsy was refused.

When one restudies the results of our tests in this instance (and many tests were made which are not here catalogued) it is now obvious that our first diagnosis of cancer was correct. Observe that during the period of observation the icterus index mounted from 8.3 to 75 units in one week's time. Unfortunately, the cholebilirubin and hemobilirubin were not estimated, chiefly due to the surgeon's zeal to have action. Observe that the urine and fecal urobilinogen quantitative totals remained at the cancer level. For some reason, for which we are not able to provide a satisfactory answer, the cholesterol and cholesterol ester levels were low, at 85 and 35 milligrams per cent respectively. Nevertheless, the alkaline phosphatase denoted extrahepatic obstruction. In this instance the Hanger test was negative and the hippuric acid synthesis was not recorded.

One further test was extremely helpful and we think it had meaning: on a meat-free diet this patient, during the period of study previous to her first operation and again previous to her re-exploration, showed repeated positive tests for blood in the stool. This evidence we think summates most logically to establish the presumptive diagnosis of carcinoma of the ampulla of Vater.

*Cases 9 and 10:* Both patients are middle-aged white women. They came into St. Mary's Hospital at a time when the cases of "infectious hepatitis" mentioned previously were appearing quite regularly. The woman in Case 9 was pregnant at the fourth month, and later on bore a premature infant with the erythroblastosis foetalis syndrome, with some Rh factor associated. We presumed the surgeon was led to perform surgical exploration, including drainage of the common duct, by the

nature and degree of the colicky attacks. We were unsuccessful in pleading the cause of conservation. As a matter of fact, the surgeon didn't wait until all the tests were completed!

Reviewing the tests, we draw attention to the level of .040 urobilinogen in the twenty-four-hour stool, as speaking very definitely against extrahepatic obstruction. The total blood cholesterol at 165 milligrams per cent and the alkaline phosphatase at 11.3 King-Armstrong units pointed in the same direction. Conversely, the four-plus-positive Hanger and the reduction of the hippuric acid synthesis to 1.18 grams should have been evidence enough that this patient had a good chance for recovery with proper medical and dietary care, without submitting her to the trauma of introducing a drain into the common duct, with all the other possible liver depressants incidental to the anesthetic.

*Case 10.*—This white woman, aged forty-five, is included in this list because she had obliging evidence of gallstones, as shown by the Graham-Cole roentgen films. Observe, however, the doubling of the alkaline phosphatase from a high normal of 14 units to 31.1 units as the only evidence furnished of extrahepatic obstruction; and she had the four-plus Hanger positive test, although the hippuric acid was not much reduced from the normal. Some critics may claim that the presence of gallstones alone is sufficient evidence of cholecystitis and that cholecystitis is a sufficient source for hepatitis. However, in this instance the pathologist searched this gall bladder carefully and found no evidence of inflammation whatever. We have the subtle feeling that despite the presence of stones in the gall bladder this woman had infectious hepatitis of unknown origin.

## Conclusion

In conclusion, these headings comprise what we have hoped to accomplish: to urge the closest co-operation between clinicians and the clinical laboratories in the diagnostic problems submitted by jaundiced patients.

1. Diffuse hepatitis, whether due to some hepatic toxin (cinchophen or arsphenamines or such), or due to some acute infectious process (viral in nature), is a medical disorder. A low fat and a very high protein diet and circumspection cure most of these patients. Frequently, such patients have had needless operations performed, in many hospitals.

2. When it is proven that the jaundice is primarily extrahepatic, not only should the diagnosis be made with certainty, but the surgeon in performing exploration should know what he is expected to do.

(a) Carcinoma of the head of the pancreas, carcinoma of the ducts, including the ampulla of

*(Continued on Page 1001)*

## CYSTECTOMY FOR CARCINOMA OF THE BLADDER

THEODORE H. SWEETSER, M.D.

Minneapolis, Minnesota

CARCINOMA of the bladder has presented to the urologist one of his most discouraging problems. At the meeting of the American Urological Association in 1939, Orr, Carson and Novak reported "a statistical study of present-day methods used in the treatment of tumors of the bladder." Some of the findings and statements regarding cystectomy are very discouraging.\* While some fourteen surgeons favored the use of cystectomy more often in carefully selected cases, only eight of the 267 reporting surgeons gave cystectomy as the procedure "giving the longest life with the greatest degree of comfort to the patient."

As is commonly felt regarding malignancy in general, I feel that the cure of carcinoma of the bladder is accomplished only by complete destruction or removal of the growth. Results of radiation therapy, hailed with such hope and promise, have not been satisfactory in the experience of most men. Transurethral resection and fulguration will cure many localized papillary tumors of low grade malignancy, though multiple and more extensive growths of that nature may be found beyond practicable reach by such means. Infiltrating growths, especially of higher grade malignancy, are often incurable by any of the means now available. Segmental resection of the bladder wall will cure some of those infiltrating growths located outside the trigone. Cystectomy will cure some of them if used early, and should cure many of the less malignant papillary tumors which are too extensive for cure by less radical surgery.

At first glance, cystectomy should be a practicable and logical means for cure of carcinoma of the bladder, since the bladder is not a really essential organ, and since it has been generally felt that metastasis occurs so late that death is more often due to ureteral obstruction and consequent renal infection. However, the bladder is relatively inaccessible, diversion of the urinary flow has been a difficult problem, and the lymphatic drainage area is not simple or easily removed.

Because of these difficulties and the consequent poor results, cystectomy long ago fell into disrepute. In recent years, improvements in pre-operative and postoperative treatment and in the technique of ureteral transplantation, have revived interest in the operation. However, surgeons, even of wide experience, still disagree sharply as to whether or not the operation is at all justifiable.

Diversion of the urinary stream by transplantation of the ureters has been one of the greatest obstacles, if not the greatest, in the use of cystectomy. Here we have again a sharp disagreement among surgeons. Most urologists advise transplantation to the colon whenever possible, but some advocate transplantation to the skin, either as a preliminary step or as one part of the operation itself. Huggins of Chicago has even advocated transplantation of one ureter to the skin, and simple ligation of the other ureter at the time of cystectomy. Transplantation of the ureters to the skin is certainly simpler and carries less immediate risk than transplantation to the bowel, but the care of the stumps and the collection of urine have added to the discomfort and unhappiness of the patients. Prevention of strictures and of cellulitis at the cutaneous openings of the ureters has sometimes been difficult. Transplantation of the ureters to the bowel became practicable after development of the so-called submucosal principle developed and popularized by Coffey. However, the method still carries an operative mortality of 24 to 50 per cent in the hands of even the most experienced surgeons, and the very real danger of later development of renal infection. Ferguson in 1931 suggested a two-stage transplantation, implanting the intact ureters at the first stage and establishing the opening into the bowel at the second stage. This principle was applied with modifications by Higgins, Winsbury-White, Poth, Brenizer, and Jewett. Although I have not tried this method, it seems to me that it may reduce the risk. Sigmoidal transplantation of a ureter that has become dilated through obstruction of its lower end by the tumor can be carried out successfully, but may not be worthwhile if its kidney has been badly

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\*See Table I in the article by Orr, Carson and Novak.<sup>5</sup>

damaged by back pressure and if the other kidney has undergone some compensatory hypertrophy.

There is less divergence of opinion as to the technique of the cystectomy itself, though various methods have been suggested. Years ago part or all of the prostate and vesicles were usually left in place; but it is now recognized that the entire prostate and the vesicles can be more easily removed with the bladder and that thereby the prospect of cure is improved. Some men, apparently with the idea of dividing the lymphatic and the blood supply as early as possible in the operation, have carried the dissection down to the sides and behind the bladder and prostate before dividing the urethra. Others, recognizing the greater ease of dissection and reduced risk to the rectum, have carried the dissection downward to the sides and posteriorly only beyond the superior vesicle arteries, and have then approached the urethra through the prevesical space, clamped the urethra distal to the prostate and used it as a tractor lifting the prostate and seminal vesicles upward and approaching the vasa, ureters, and inferior and middle vessels from below. It seems to me that this latter method is probably preferable. Hinman described a method of combined suprapubic and perineal approach, but it seemed too formidable to me and apparently to most others who have reported cystectomies. Perhaps the dependent drainage which he emphasizes can be as well obtained and with less dissection through a perineal urethrotomy if it is deemed necessary at all.

Pre-operative cleansing and postoperative care of the bowel, including the use of sulfa drugs, has been one of the most important factors in successful sigmoidal transplantation of the ureters and in the preservation of kidney function after the transplantation. I have also occasionally used eserine postoperatively to help maintain ureteral peristalsis as a protection against ascending infection. Careful attention to every detail in the pre-operative and postoperative care, and to every step in the operative technique should bring within reasonable limits the risk of cystectomy with transplantation of the ureters to the bowel.

It would seem to me, then, that the operation of cystectomy can be done with reasonable prospect of postoperative survival and comfort, and that the prospect is becoming steadily brighter through improvements in technique. That prospect will be still brighter if we can impress upon the

public and upon the doctors themselves the importance of prompt and adequate investigation of bladder disturbances and especially of hematuria.

The prospect of ultimate cure is not so bright. One difficulty seems to me thus far completely unsolved and makes cancer of the bladder definitely less curable by surgical removal than is cancer of the breast or cancer of the colon. That difficulty is the complex anatomy, wide distribution, and relationship to other organs of the lymphatics and lymph nodes draining the bladder. It seems thus far entirely impracticable to try to remove the lymphatics and primary lymph nodes at the beginning of the operation of cystectomy, or even at any time during the operation. This at once reduces the cystectomy to a class with simple mastectomy, or simple segmental resection of the colon, with the correspondingly lower incidence of complete cure. Many authors tacitly recognized that difficulty and it has probably been the unappreciated cause of the conviction of most surgeons that cystectomy is never justifiable. Although Conway and Broders used their studies of submucous extension of squamous cell epithelioma of the urinary bladder as an argument that cystectomy offers "more probability of permanent cure than any other method," still a study of their report indicates that the "extension" was frequently also out through the bladder wall, and that metastasis was unrecognized at operation in many cases. The difficulty is further emphasized by analysis of the more recent report of Priestley and Strom of the same clinic. They reported that, of fifty-one patients who survived cystectomy for carcinoma of the bladder, twenty-six had succumbed since operation, and the cause of death was known in twenty. Of these twenty whose cause of death was ascertained, sixteen had died from metastasis and thirteen of these "extension of carcinoma beyond the bladder either to the perivesical tissues or to the regional lymph nodes was noted at the time of operation." Similar extension must have been unrecognized at operation in the other three of that sixteen who died from metastasis. Hinman and others have attempted dividing the bladder attachments before manipulation of the bladder, insofar as possible, but that attempt has not extended to the lymph nodes, the primary filters of cancer cells.

Admitting that the usefulness of cystectomy for malignancy has serious limitations, it seems to me that there are cases wherein it gives some pros-

pect of cure not otherwise obtainable. Of course, before considering the prospect of removal of the tumor, itself, one must consider the prospect of survival of the patient: his general condition, his nutrition, hemoglobin, cardiovascular status and age, as well as the experience, dexterity, and temperament of the surgeon. Tumors amenable to cystectomy include very extensive low grade papillary carcinomas and papillary carcinomas with multiple attachments to the bladder wall, sessile tumors, even of greater malignancy, which, on careful abdominal exploration, are found to be limited to the bladder, and especially those involving the trigone, even if they extend into the prostatic urethra and prostate. However, it is now agreed that tumors found on exploration to have otherwise extended beyond the bladder are not to be treated by cystectomy.

My own experience with the various methods of treatment of cancer of the bladder has been none too encouraging, though there have been some heartening experiences. One patient is alive and well more than sixteen years after suprapubic cystostomy, removal of squamous-celled carcinoma with cautery knife, and actual low heat cautery to the tumor base. Two patients are alive and well six and one-half and four and one-half years after segmental resections of infiltrating papillary cancers, one being of grade III. Several are alive for considerable periods up to eight and one-half years after transurethral resection and fulguration with and without radiation therapy.

Cystectomy for carcinoma of the bladder has been done by me six times. Five patients survived the postoperative period. The ultimate results, while far from perfect, have been interesting and may be termed encouraging or discouraging depending upon one's point of view. Surely all six would have died from the malignancy with less radical treatment. I feel hopeful that two patients are definitely cured of their cancers, though the postoperative periods are too short to be so reported by a statistician (one nearly 4 years and one seven months). Three patients had high grade infiltrating tumors and were treated by cystectomy and transplantation of the ureters to the skin. One I have been unable to trace, and the other two were suffering from recurrences when last seen, one one year and the other over two years after their operations. One patient died after a cystectomy which I would not have performed if

desperation had not got the better of my judgment. He probably should have been allowed to die after palliative treatment without any attempt at cure, but he was a young man who, I thought at the time, deserved a fighting chance. He was admitted with a hemoglobin of 18 per cent which could not be raised farther than to 26 per cent by repeated transfusions. The tumor was an infiltrating one, and we feared that a multiple stage program might give the tumor time to extend beyond the bladder. There was a seventh patient at the General Hospital whose cystectomy was not done because he died of peritonitis after transplantation of one ureter to the bowel.

### Case Reports

*Case 1.*—A woman, forty years old, was admitted to the Minneapolis General Hospital March 17, 1941. She had been treated for tertiary syphilis in 1938 and had been sent to Glen Lake Sanatorium for possible tuberculosis of the kidneys in September, 1940, after the finding of acid-fast bacilli in the urine and urographic deformities suggesting bilateral renal tuberculosis. Further study at the sanatorium had failed to prove the tuberculosis, but biopsy from some hard indurated periurethral tissues was reported as possible squamous cell carcinoma. Examination demonstrated a nodular induration of the urethra with tenderness there and in the inguinal regions and on percussion over the right kidney. Her hemoglobin was 60 per cent, her urine contained many pus cells and occasional erythrocytes and her Wassermann tests were positive. Cystoscopy showed trabeculation of the bladder, reflux up the open ureters, and slight delay in appearance time of indigocarmine. The urethra was sclerotic and pale, but with no fungating or ulcerated growth. The retrograde pyelograms showed bilateral hydronephrosis and hydroureter. Bilateral cutaneous ureterostomy was done extraperitoneally on March 28 and transfusion on April 13, 1941. On April 14 the entire bladder and urethra and the anterior third of the vagina were removed in one piece by a combined suprapubic and perineal approach. The pathologist reported a transitional cell carcinoma invading the muscularis deeply at the bladder outlet. During convalescence there was considerable difficulty with the cutaneous ureterostomies, with at least two attacks of pyelonephritis. She left the hospital in good condition on July 4, wearing rubber cups over the ureters which were functioning well. We have been unable to trace her whereabouts recently.

*Case 2.*—A woman, forty-eight years old, was admitted to the Minneapolis General Hospital August 19, 1941, complaining of frequency, urgency, dysuria, and hematuria, the hematuria having been present for two months. Examination showed a poorly nourished, exhausted patient with cutaneous neurofibromatosis. Her bladder was tender and there was an indefinite mass in the right lower quadrant that was movable and tender. Her hemoglobin

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was 94 per cent and the urine was full of blood. Cystoscopy on August 20 showed, after removal of large blood clots, an extensive growth in the base of the bladder; biopsy showed extremely undifferentiated carcinoma

nation was unimportant excepting arterio-sclerotic heart disease, well compensated, with a blood pressure of 200/138. The excretory urogram showed normal kidney function with a very small and markedly trabeculated blad-



Fig. 1. Case 2. Pre-operative view.



Fig. 2. Case 2. Postoperative view.

grade IV. On August 23 excretory uograms (Fig. 1) showed carcinoma of the bladder with obstruction of the ureters, dilatation of the lower parts of both ureters, right hydronephrosis and calcifications in both kidneys. Film of the chest showed disseminated tuberculosis with calcification. On September 10 exploration showed no gross extension of the carcinoma beyond the bladder and apparently no metastasis; both ureters were dilated. Bladder, urethra, and the anterior third of the vagina were removed in one piece by a combined suprapubic and perineal operation, the ureters being transplanted to the skin through stab wounds in the lower abdominal quadrants. The Penrose drains were brought out through the vagina which was otherwise closed, and the suprapubic wound was closed completely. A No. 18 F. soft rubber catheter was placed in each ureter. Convalescence was satisfactory excepting one attack of bilateral pyelonephritis. Attempts were made to use cups over the ureterostomies but they fitted poorly probably because of the neurofibromatosis. Her general condition was good thereafter excepting difficulties with the catheters and her temperament (Fig. 2). On August 24, 1943, we first noted evidence of recurrence behind the symphysis and probably in the right pelvic wall. On December 15 she was sent to the cancer home of Our Lady of Good Counsel in St. Paul. At that time there was carcinomatous involvement of the labia, emaciation, vaginal bleeding and pain. She died shortly thereafter.

*Case 3.*—A man, sixty-eight years old, was admitted to the Minneapolis General Hospital May 3, 1943, with a history of increasing dysuria and nocturia during the past year but with no hematuria. His physical exami-

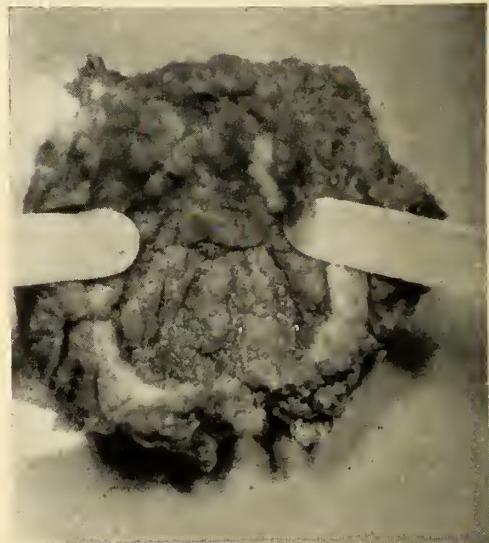


Fig. 3. Case 3.

der. When cystography was attempted only a few drops of very bloody urine were obtained by catheter and injection of 30 to 40 c.c. of air or water caused severe pain. On May 7 transurethral resection of the prostate resulted in removal of 7 grams of tissue which was reported as benign. Biopsy at the same time from an apparently benign ulcer in the bladder vault showed squamous celled carcinoma. The bladder capacity was not over 60 c.c. On May 20 cystoscopy again demon-

strated a rigid contracted bladder which was not fixed when examined by rectum with the cystoscope in place. However, seven bits of tissue removed for biopsy again showed squamous celled carcinoma. On May 24 cystect-

omy was performed (Fig. 3) with transplantation of both ureters to the skin. He stood the operation poorly with severe vascular collapse and considerable hemorrhage during the operation. One week after the operation his wound broke open and had to be resutured. After prolonged convalescence he went home from the hospital on September 26, 1943. On January 13, 1944, he returned and was given deep x-ray therapy at the University Hospital. On April 25, 1944, he was sent to the cancer home of Our Lady of Good Counsel. He died there.



Fig. 4. Case 4. Pre-operative view.



Fig. 5. Case 4. Three and one-half years after cystectomy.

omy was performed (Fig. 3) with transplantation of both ureters to the skin. He stood the operation poorly with severe vascular collapse and considerable hemorrhage during the operation. One week after the operation his wound broke open and had to be resutured. After prolonged convalescence he went home from the hospital on September 26, 1943. On January 13, 1944, he returned and was given deep x-ray therapy at the University Hospital. On April 25, 1944, he was sent to the cancer home of Our Lady of Good Counsel. He died there.

**Case 4.**—A man, forty-one years old, married and with two children, was sent to me on January 19, 1942, immediately after his first visit to his doctor. He had had painless hematuria for two days in September, 1941, but had blamed it to his occupation of motorcycle policeman. The bleeding had recurred about January 1, and had continued during the past two weeks with some frequency and nocturia and some distress just before voiding. There had been some clots in the urine. Cystoscopy on the following day, January 20, showed a papillary carcinoma about 5 cm. in diameter with an extensive attachment to the trigone, posterior wall and right lateral wall and even to the anterior wall where it extended into the prostatic urethra. Both ureteral orifices were hidden by the growth. A fairly large portion of the tumor was resected transurethrally. The laboratory reported it as a papillary carcinoma Grade II, with distinct infiltration into the submucous layer of the bladder wall. A cystogram showed that a large tumor mass still remained, involving especially the posterior and right lateral portion of the bladder. Intravenous urograms (Fig. 4) also demonstrated this tumor mass and showed that there was infiltration around the left ureteral orifice,

the renal cortex especially since there was a palpable mass in the right renal area. After discussing with him the relative chance of cure and the relative risks, it was decided to first transplant the left ureter to the bowel, exploring for metastasis at the same time, then do a right nephrostomy or nephrectomy, and finally do a cystectomy.

On January 30, I transplanted the left ureter to the sigmoid. His urea nitrogen rose to 57.9 mgm. and the creatinin to 4.3 mgm. on February 2. That was another indication of poor function of the right kidney, since the temporary interference with the left kidney, following the transplantation, should not have caused nitrogenous retention if the right kidney had been active. However, he continued to put out about 800 c.c. of urine through the bladder after the left transplantation so that I thought that the right kidney might be worth saving. Therefore, on February 14 after the blood urea nitrogen reading had dropped somewhat, I transplanted the right ureter to the bowel and removed the bladder, prostate, and vesicles at the same time. The ureter was fully 1 cm. in diameter and thin-walled. That made the transplantation to the bowel more difficult, as also did the fact that we had previously transplanted the left ureter instead of transplanting the right one first, as is usually done. Simple ligation of the right ureter would have been easier if I had known and accepted Huggin's ideas and if I had agreed completely with Hinman's pronouncements on renal counterbalance. The ultimate result of my transplantation was little if any better. The bladder itself was removed with no unexpected difficulty, two Penrose drains being placed in the suprapubic wound, one of them passing out through a stab wound in the perineum. He developed a fecal and urinary suprapubic fistula after that operation, with a right pyelone-

## CARCINOMA OF THE BLADDER—SWEETSER

phritis which cleared up under treatment with sulfacetamid (Sulamyd). He left the hospital March 7th in good condition. He regained his former weight rather slowly, but has worked steadily and lived a fairly normal

reported that he had just driven to Duluth and back in two days. On June 2, he reported that he was having trouble with his feet which on inquiry was found to be due to his trying to work sixteen hours a day. On



Fig. 6. Case 5. Pre-operative view.



Fig. 7. Case 5. Five months after cystectomy.

life. On September 15, 1945, three years and seven months after his operation, he weighed 206 pounds and felt well. Physical examination gave no evidence of any recurrence or metastases; his right kidney was still palpable but not tender, and there was no tenderness of the left kidney. He had no gastrointestinal difficulty and was able to go eight hours at night without emptying the rectum. Intravenous urograms (Fig. 5) showed normal left kidney and ureter, all the dilatation having disappeared. There was little, if any, function of the right kidney.

**Case 5.**—A man, forty-four years old, was sent to me on January 26, 1945, for painless hematuria. He had had it for a few weeks about a year previously, but had not consulted his doctor. The hematuria had recurred about January 1, 1945, and had continued intermittently in increasing degree until he sought help. His doctor requested complete examination at once. By rectal examination, a firm irregular mass could be felt in the base of the bladder beyond the prostate, which was normal. Cystoscopy demonstrated multiple very extensive papillary tumors with attachments behind both ureteral orifices and along the right lateral wall to the anterior wall and as far as the bladder outlet. No points of infiltration into the bladder muscle were seen. Forty-one grams of tissue were resected transurethrally, but it was felt that the removal was far from complete. Microscopic report on the tissue removed was papillary carcinoma Grade I. Intravenous urography demonstrated normal renal pelvis and ureters (Fig. 6). The right ureter was transplanted on February 1 and the left on February 13. Cystectomy was done on February 24. He went home in good condition on March 10. On April 15 he

September 8 he was feeling well. Physical examination found no signs of recurrence or metastases, and intravenous urography (Fig. 7) showed excellent functioning of both kidneys, the only abnormality being slight right hydronephrosis.

### Conclusions

1. Cystectomy for carcinoma of the bladder is feasible in properly selected cases with proper attention to pre-operative and postoperative care.
2. In my experience, transplantation of the ureters to the bowel has given the patient a much more satisfying result than transplantation to the skin. Transplantation of the ureters to the skin at the time of cystectomy is justifiable in patients with malignant infiltrating tumors of the bladder base if one agrees to the dictum that such growths should be removed at the earliest possible moment.
3. The ultimate results of cystectomy should be good in cases with relatively less malignant papillary tumors with very extensive attachment to the bladder wall, or with multiple extensive attachments, but in my experience the ultimate results have been unfavorable in cases of highly malignant infiltrating tumors, even though limited to the bladder wall.
4. Earlier diagnosis through better education of the public and the profession only partially an-

(Continued on Page 1026)

## THE MORE RECENT APPROACHES TO ALLERGY

W. RAY SHANNON, M.D.

Saint Paul, Minnesota

TO those long interested in allergy it has been apparent that no approach to the problems it presents could be satisfactory short of one which directed its effort toward the neutralization of the entire allergic state and all of its manifestations by simple procedure. The possible directions from which such development could come would seem to be two: One would be the discovery of the universal antigen, desensitization to which would eliminate all sensitivities, while the other would be identification and correction of the essential tissue defect which permitted an individual to become allergic in the first place. Both of these approaches are already being championed, and with notable success. It is the purpose of this paper to call attention to that fact and compare them in some detail.

In 1940 Evans, Bodman and Maisin published, from London, an expression of their ideas as to the nature of the tissue defect, its cause, and their experiences in attempting to correct it.<sup>17</sup> They surmised that the defect consisted of a failure in intracellular metabolism whereby the breakdown of carbohydrate before final combination with oxygen was incomplete, and that the metabolic failure resulted from a lack, either through primary failure (inherited allergy) or some destructive agent (acquired allergy) of an enzyme necessary to that chemical process.

Their researches led to the discovery of ethylene disulphonate as the missing enzyme (or its capable substitute), its experimental trial and final clinical use. The results in human allergy were striking. Their methods are being applied to an increasing extent in this country and the growing number of reports shows results which afford abundant support for the claims of the original investigators.

Paralleling this work, an effort of possibly tremendous magnitude is being expanded in America. This has as its purpose the solution of the allergic problem by identifying the universal allergenic poison and providing means by which, through a system of vaccination, it can

be neutralized. The early observations of Dale and Laidlaw that the symptoms of anaphylactic shock were the same as those of histamine poisoning had never been forgotten.<sup>12</sup> They focused the attention of numerous investigators on the possibility of histamine as the possible universal cause of allergic symptoms. The theory evolved envisioned a specific antigen-antibody reaction which resulted in the release of a totally non-specific toxin, histamine (or histaminelike substance commonly referred to as H-substance) which was responsible for the actual symptoms of anaphylaxis or allergy. Since any and all of the specific reactions resulted in the release of histamine (or H-substance), regardless of whether the antigen be a food, a pollen, an animal emanation, etc., it seemed reasonable to those interested that if the development of an antibody to this H-substance could be provoked in the body a direct cut-through to the solution of all allergy (anaphylaxis) would be provided.

The early efforts were praiseworthy though disappointing.<sup>11,18,19,20,24,30,33</sup> If the injection of increasing doses of histamine did not produce an antibody capable of neutralizing H-substance, it did create interest in the subject to the point where the conception of a histaminase, an anti-histamine enzyme, was conceived with the hope that the administration of such a substance to sensitive individuals might confer a more or less passive immunity which would be universal to all allergies.<sup>25,36</sup> Clinical results were, however, discouraging from this approach also.<sup>1,5,28,41</sup> It remained for Sheldon et al., to apply the principle discovered by Landsteiner to the problem and, thereby, add large significance to the histamine theory.<sup>37</sup>

Landsteiner demonstrated that substances not antigenic of themselves, perhaps because of their simple chemical structure, could, by special chemical means, be joined to various protein molecules and thus rendered antigenic.<sup>29</sup> That is, it became possible by proper vaccination with the combined substance to bring about the development of antibodies against the previously nonallergenic simpler chemical in the combination properly re-

From the Children's Hospital, Saint Paul, Minnesota.  
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ferred to as a hapten. Approaching the problem from that angle Sheldon and his co-workers succeeded in combining histamine with a modified protein fraction derived from horse serum into a compound which was shown, both in animals and humans, to be capable, in properly vaccinated subjects, of rendering such subjects not only abnormally resistant to histamine itself, but also less sensitive to their specific allergens whether the sensitivity had been induced artificially (animal anaphylaxis) or had been acquired through natural means (human allergy).

This work has been expanded both by the original investigators and others with the result that it seems reasonable to conclude that, from this source a promising method for the blanket treatment of all allergies is developing which does not require the tedious and often unrevealing detail of the search for specific sensitivities.<sup>6-10,13,14,21,34,35,42</sup>

It is essential that we recognize the realities of this approach. It thinks of allergy, as we recognize it, as a symptom-complex which reveals itself because a nonspecific toxin (histamine or H-substance) has been released for distribution throughout the body by a reaction which has occurred between an antigen (which may be almost any type of substance) and its specific antibody. It would control the symptom-complex by vaccinating the body against the products of that specific union (histamine or H-substance) and thus providing an antidote for such poison in the form of an antibody which should be omnipresent in the body humors. The method is biologic in its inception and humoral in its performance.

The approach of the London investigators, whose work also shows so much promise, is quite the opposite. They are attempting to eliminate allergy, not by biologic but by chemical means, and not in the body fluids but within the tissue cells. It is their purpose to correct the defect in cellular metabolism by which a person is permitted to become allergic in the first place. It may be a coincidence of no little importance that they, also, are directing their attack against histamine or a histaminelike substance.

Their ideas may perhaps be best explained in their own words:

"Kendall (1928) published experiments showing that if involuntary muscle be suspended in

Tyrode's solution, and histamine added thereto, contraction occurs in the suspended muscle. If, however, dilute formaldehyde be added, such (allergic) contraction does not take place."<sup>26</sup> Kendall suggested that this result was brought about by a blockage by formaldehyde of the amino group in the histamine molecule. "Goldie and Sandor (1937) have actually published a series of experiments showing that ketene can block the amino group in the same manner."<sup>23</sup> "We thought that such a substance might be the body's first line of defense against allergy . . ." The reasons for that conclusion can become apparent only after a most minute examination of the paper as a whole.

Backgrounding their theory is a brief but rather detailed explanation of the chemical processes by which the body cells utilize carbohydrate (hexose) for the creation of energy. They explain, "In anaerobic muscle metabolism involving the greater part of the energy exchanges, oxygen is not used to burn up sugar (as was once thought), and never enters the molecule until . . ." (its complexity has been vastly reduced by an intricate series of intracellular chemical processes and) "*The final degradation product* is split to form carbon dioxide and water."

Among the important chemical reactions necessary to the processing of hexose toward the final degradation product is that called by Oppenheimer and Stern, "Dehydrogenation, i.e., separation of hydrogen from a donator, . . ."<sup>31</sup> "Many of these . . . changes involve the action of an enzyme, dehydrogenase, whose function it is to split off these hydrogen atoms. There are many of these dehydrogenases . . . a succinic dehydrogenase, and so on."<sup>17</sup> Referring to the final product, the substance with which free oxygen does finally combine to form carbon dioxide and water they say, "Peters (1936) has shown that this breakdown is to acetaldehyde . . ."<sup>32</sup>

It would seem to have been this statement of Peters' that caused the authors to attach the significance they did to the remarks of Goldie and Sandor about ketene. Knowing that ketene was a chemical substance simpler than acetaldehyde by the mere loss of two hydrogen atoms, and realizing that acetaldehyde had been derived from hexose by a series of dehydrogenation processes, each of which had been the stripping of

two hydrogen atoms from a "donator," they envisioned that by one more stripping process ketene could always be present in the tissue cell. In their words, "We thought that a further stage of dehydrogenase action (beyond acetaldehyde [mine]) might take place in living tissue by the interaction of an enzyme on acetaldehyde with momentary formation of ketene." This, "We thought . . . might be the body's first line of defense against allergy, and that its absence, either due to inherited faulty metabolism ("inherited allergy"), or due to inhibitions by bacterial toxins, in a subject whose metabolism was already imperfect, would result in the appearance of allergic symptoms, and thus the type of allergic disease would be a function of the type of cells whose metabolism was thus affected." They conclude this "Brief Statement of Biochemical Considerations" with, "Extensive search was then instituted for some substance which might replace this part of the dehydrogenase co-enzyme system (to reduce acetaldehyde to ketene [mine]) which we postulated to be absent, or paralyzed by septic shock. For various reasons, we anticipated this . . ." (as having the chemical structure and capabilities) "typically that of ethylene disulphonate . . ." The authors propose to describe in detail this part of the work elsewhere.

It will be apparent by now, that the London investigators are advocating a *cellular* control for the allergies as contrasted with the *humoral* concept of the American workers. Each represents one of the two conceivable approaches to the problem which could offer a universal control for allergy.\* Each is backgrounded in solid theory. Each is finding an increasing support from clinical sources. And each is directing its efforts against an identical toxin-histamine or histamine-like substance.

\*Strictly speaking, a third possibility for the blanket treatment of allergy must be acknowledged, especially now since the evidence is piling up so rapidly that the actual cause of symptoms is the release within the body of histamine (or histamine-like substance usually referred to as H-substance). That possibility is the discovery of a medicinal antidote for H-substance to be taken either enterally or parenterally. There is recent evidence that this approach also is being probed with success.

It would seem apparent that such a method of treatment, while truly nonspecific so far as allergy is concerned and universal in its approach to the problem, would be purely symptomatic in its objectives and effective only so long as the antidote were being supplied. It would not have as its purpose the cure of the allergic state in the sense that this idea can be applied to each of the other approaches. Nevertheless, it could have tremendous value, especially in the management of the "evanescent" allergies, and perhaps as an adjunct to the other methods of approach for added and early action.

(See Curtis, A. C., and Owens, B. B.: Beta-dimethylaminoethyl benzhydryl ether hydrochloride (Benadryl) in treatment of acute and chronic urticaria. Univ. Hosp. Bull., Ann Arbor, Michigan, 11:25, April, 1945.)

There could be little justice, or even significance, in a comparison of the results that have been reported in human allergy from the two approaches up to the present time. Both methods have been able to offer encouragement in the onslaught against the common problem but the proponents of neither have been able to offer perfection.

From the available material it must be admitted that the experimental foundation of the American investigators is much the more impressive. From an adequate background of scientific theory they have proceeded to an expansive experimental program in which they have shown, either by animal or human experiment or both:

1. The substance they have contrived for vaccination contains no (or practically no) free histamine.
2. After proper hydrolysis with concentrated HCl a significant amount of histamine is released from such substance.
3. Injection of this substance seems to be incapable of producing symptoms of histamine poisoning.
4. Even though the protein fraction of the chemical was derived from horse serum it has been administered to horse-serum-sensitive patients without reaction.
5. Proper vaccination with this substance causes the production, in the serum of such vaccinated individuals, of antibodies against histamine.
6. Vaccination of rabbits produced *significant* protection against anaphylactic shock induced by ovalbumin.
7. Proper vaccination has provided noteworthy protection in a substantial percentage of a wide variety of cases of human allergies. While the number of clinical cases so far reported has been small the results obtained have been encouraging as to the possibilities offered by this approach to the solution of human allergy.

In contrast the available experimental evidence of the English investigators is relatively meager, perhaps because of the exigencies of wartime conditions, but more probably because the chemical concepts concerned did not involve humoral reactions, since antibodies were not conceived of as being important, and the demonstrable recording of intracellular processes, such as the authors envisioned, would probably be quite im-

possible except as they might be measured in clinical results.

Thus the report of their preliminary experiments is confined to three groups of animals (though much more extensive experimentation is implied). These experiments demonstrated:

1. Intraperitoneal injection of ethylene disulphonate afforded significant protection against egg-albumin anaphylaxis in guinea pigs.

2. This was true under two conditions: (a) when the protective material was administered in a single dose three hours before the shock was given, and (b) when, after three injections of this material at eight-day intervals the shock dose was withheld for two months.

3. If after multiple injections of ethylene disulphonate, the shock dose was given after a lapse of only twenty-four hours, the control pigs were better off than the experimental animals. This the authors have seen repeatedly and attribute to a temporary negative phase produced by multiple injections of ethylene disulphonate. They add, "If several weeks are allowed to elapse after the second injection of the oxidation catalyst (ethylene disulphonate [mine]), before the shock protein dose is given, the same degree of protection is observed as . . ." before mentioned.

To a clinical observer it is difficult to disbelieve the reports of the London investigators or to question the importance that they attached to the results of their experiments as a direction finder in the problem they were investigating. In this country the work has been sharply challenged by Fisk, Small and Foord who, after partial repetition, conclude that, in their own experiments, ethylene disulphonate did not afford a significant degree of protection against anaphylactic shock<sup>22</sup>, and S. M. Feinberg has dignified that work by what seems to be approving editorial comment.<sup>16</sup> Smith, on the other hand, has reported results even more suggestive of protection than those reported by Evans, Bodman and Maisin.<sup>39</sup>

In rather sharp contrast to the experimental approaches the clinical background of the latter group is much the more impressive. Their original series consisted of seventy-one cases of asthma, of which 27 per cent had been completely relieved, 67 per cent more benefited and 6 per cent failures. In this country, up to

October, 1944, four papers had been published which swelled the number of cases reported to 899. The list included most of the clinical types of allergy. Complete relief was accomplished in 51 per cent, satisfactory improvement in an additional 33 per cent, leaving a residue of 16 per cent total failures.<sup>3,4,38,43</sup>

Varied references have appeared in American literature since that time which caused little deviation from the figures given above. Smith has increased his series from thirty-three to 413 cases and reports 75 per cent complete remission, 20.8 per cent amelioration, and only 4.2 per cent as complete failures.<sup>40</sup> Archibald reporting on forty-five consecutive cases, concludes "The results of this study are in accord with the more conservative reports on the use of nonspecific therapy in treating allergies."<sup>2</sup> Ketcham<sup>27</sup> writes me that in a series of one hundred cases of allergies of all types, he obtained complete success in 56 per cent, 50 to 75 per cent relief in 28 per cent and total failure in 16 per cent.\*

I have had no personal experience with the histamine-protein method of treatment. I have, however, given substantial trial to ethylene disulphonate and with very satisfactory results. Complete failures have been few, complete successes also, but the great majority of patients have been benefited to a striking degree. This phase will be taken up elsewhere when the apparent causes of partial and temporary relief, as well as those of total failure, can be discussed adequately. However, I should like to mention the following case as an example of striking improvement, if not complete and permanent cure.

The patient was a boy, six years of age, who had been under my care since the age of six months. He was seen at that time because of a head cold which was accompanied by cough. It was found on examination that he, at this early age, had an established nasal sinusitis which was treated by nasal suction. However, from that time until February, 1944, he continued to suffer from repeated flare-ups of his sinusitis. At the age of two and a half years asthmatic bronchitis began to make its appearance and from that time on was a constant companion of his sinus flare-ups.

\*Since this paper was written Kurland and Bubert have published a series of twelve patients with bronchial asthma treated by ethylene disulphonate alone. Five, or 41 per cent, were unbenefted. The rest, 59 per cent, improved from slight to a definite degree. None was cured during the period of observation, maximum of which was twenty-two weeks. The authors fail to state where, in their estimate of degree of improvement, two cases in the improved group should be classified.

(Kurland, L. T., and Bubert, H. M., "Ethylene disulphonate in bronchial asthma," Bull. School Med., University Maryland, 30, 46 July, 1945.)

As the age of three and a half years, his tendencies toward the development of asthma and asthmatic bronchitis attacks having steadily increased, tonsils and adenoids were removed. This did not interrupt progress toward asthmatic invalidism, and he spent most of the fall and winter of 1943-44 out of school, either frankly in bed or confined to his house.

On February 28, 1944, he was taken to the St. Paul Children's Hospital in preparation for treatment with ethylene disulphonate. This was administered by intramuscular injection on March 4, 1944, after which he returned to his home. The following week, during which time he had been entirely free of asthma, the dose was repeated.

Since that time (to August, 1945) I have attended him through an attack of measles and of virus pneumonia, neither of which was complicated by asthma. Aside from these two incidents I have seen him for illness only twice. The first time was for an acute upper respiratory infection February 27, 1945, when no asthma was present. The second time was one month later and then he was found to be asthmatic. The parents said that the previous infection had persisted ever since as a nasal sinusitis and that asthma in mild form had been present for four days. This cleared at once after a single nasal suction. Twice during the 17 months since he was treated with ethylene disulphonate, he was awake part of a night with a cold and slight wheeze but I was not even consulted by phone, the trouble was so mild and so transient.

One cannot call the result in this case perfect but it is doubtful that any one would not call it satisfactory. Results such as this have typified those that I have obtained with ethylene disulphonate in general.

Clinical results of this type are too striking to be disregarded. This is especially so since they have been obtained by a method of treatment which eliminates the obviously impossible task of seeking out individual allergies and then dealing with them singly. They are themselves the guarantee that extensive recognition and trial of such a method of treatment will not be long delayed within the medical profession of America. As for the histamine-protein method of approach, it has already, in spite of very limited clinical trial, been given enthusiastic approval in the high places in American Medicine.<sup>15</sup> This very fact should assure it a sound future as a clinical instrument. It would indeed be an important development toward the alleviation of human suffering if the very early promise shown by both methods should be substantiated, and there seems to be little reason why it should not be. Both spring from a background of sound scientific facts;

both seem to be harmless,\* and both have yielded a high degree of clinical success in their preliminary trials.

It should be emphasized that each represents the theoretical ideal in the treatment of the allergies for each offers simplicity in the solution of the problems concerned. It is worthy of re-emphasis that each came from one of the two possible directions from which a universal solution to allergy *could* come, namely, the approach which would desensitize to a universal antigen, and the one which would correct the tissue defect which was responsible for allergy ever developing in the first place. The incomprehensible thing is, that each is directing its attack against an identical substance, namely, histamine or histamine-like substance. Such coincidence is probably more than mere accident. It offers the hope that the two methods of treatment may be used in a complementary manner.

### Summary

From almost the beginning of comprehension concerning the magnitude of the role played by allergy in human ailments is has been apparent that no method for its control could ever be satisfactory short of one which bi-passed the laborious and impossible sleuthing processes necessary to seek out and then deal with separately, the endless varieties of allergens to which any patient might be sensitive. Such a development could come from either of two directions—it could provide a universal allergen, desensitization to which would eliminate all sensitivities, or it could recognize and correct a possible defect in the tissues of allergic individuals whereby they had been enabled to become sensitized in the first place.

It has been the purpose of this paper to call attention to the fact that that long-awaited short-cut made its appearance in clinical medicine, not from *one* of the anticipated directions but from *both* almost simultaneously. One originated in England and would eliminate the allergic state by correcting the tissue defect by which such a

\*Epstein has recently called attention to a report by Braden recording a severe constitutional reaction following the use of Hapamine, a commercial histamin-protein product. The original report could not be consulted since it is available only to a group of allergists belonging to a special correspondence club.

(Epstein, S.: Allergic skin diseases, eczema—urticaria—drug eruptions, a critical review of recent literature. Ann Allergy, 3:306, 1945.)

state was permitted to exist. The other had its origin in America and proposes to correct all allergies by providing, through vaccination, an antibody which would neutralize the toxin which, it contends, is the universal cause of symptoms in all allergic conditions. The English method is chemical in nature, and works within the tissue cell. The American approach is biologic and would accomplish its results through the presence of antibodies carried in the tissue fluids. Both conceptions are deeply rooted in fundamental scientific background, and both have the backing of experimental support. Each is gaining a following among clinically minded physicians, which speaks well for its ultimate success as a proven clinical instrument in the control of the allergies. Each is directing its efforts against the same poison—histamine or histamine-like substance. It is difficult not to believe that each is right, if neither is perfect, and it does not seem inappropriate to hope that, at least in part, one method may be capable of covering the other's deficiencies so that, used together, a much higher success may be attained in the control of the allergies.

### Conclusion

It is my conviction that means for the effective control of allergy with its wide variety of manifestations by procedures simple enough to be available to every practitioner of medicine for use in his office are immediately at hand. The basis for that conviction is contained in the preceding pages.

**AUTHOR'S NOTE:** It is hoped that readers will realize that the implications contained in the designations "British and American approaches" are purely arbitrary. Both origin of ideas and development of theories have been so interchanged that they really cannot be so simply divided. For instance, it is highly probable that both owe their essential beginnings to the work of British scientists, Dale and Laidlaw. From that point on, it is quite evident that both have borrowed from each other, and even from others on occasion. It is nevertheless a fact that the application of theory to clinical practice does permit the separation as indicated in the paper.

### Bibliography

1. Alexander, H. L., and Bottom, D.: Failure of histaminase to protect guinea pigs against histamine and anaphylactic shock. *J. Immunol.*, 39:457-460, (Dec.) 1940.
2. Archibald, H. G.: Ethylene disulphonate and sterile distilled water controls in the treatment of children's allergies. *Arch. Pediat.*, 62:219-222, (May) 1945.
3. Bartlett, C. L.: Treatment of the allergic state in children with ethylene disulphonate; a summary of 247 cases. *Arch. Pediat.*, 61:311-316, (June) 1944.
4. Bartlett, C. L.: Treatment of the allergic state with ethylene disulphonate. *M. Rec.*, 157:477-480, (Aug.) 1944.
5. Best, C. H., and McHenry, E. W.: A note on histamine. *J.A.M.A.*, 115:235, (July) 1940.
6. Cohen, M. B.: The basic relationship of allergy and immunity. *J. Allergy*, 14:116-120, (Jan.) 1943.
7. Cohen, M. B., and Friedman, H. J.: Antibodies to histamine induced in human beings by histamine conjugates. *J. Allergy*, 14:195-202, (March) 1943.
8. Cohen, M. B., and Friedman, H. J.: Immunity against H-substance. *J. Allergy*, 15:245-248, (July) 1944.
9. Cohen, M. B.: The immunologic management of a patient with allergy. *J. Allergy*, 15:274-278, (July) 1944.
10. Cohen, M. B.: Urticaria and angioneurotic edema. *Ohio State M. J.*, 39:1120-1122, (Dec.) 1943.
11. Dale, H. H.: Some chemical factors in the control of circulation. *Lancet*, 1:1285, (June 22) 1929.
12. Dale, H. H., and Laidlaw, P. P.: The physiological action of B-minazolylethylamine. *J. Physiol.*, 41:318-344, 1910.
13. Derbes, V. J.: Some recent advances in bronchial asthma. *M. Clin. North America*, 29:460, (March) 1945.
14. Dragstedt, C. A.: The significance of histamine in anaphylaxis. *J. Allergy*, 16:69-77, (March) 1945.
15. Editorial: Histamine specific antibodies. *J.A.M.A.*, 124:362, (Feb. 5) 1944.
16. Editorial: Nonspecific inhibition of anaphylaxis. (Signed S.M.F.) *J. Allergy*, 15:302, (July) 1944.
17. Evans, G., Bodman, J., and Maisin, J. H.: The chemical control of allergy. *M. Press*, 203:457, (May 29); 476, (June 5) 1940.
18. Farmer, L.: Non-specific "desensitization" through histamine. *J. Immunol.*, 36:37-44, (Jan.) 1939.
19. Farmer, L.: Histamine in anaphylaxis and allergy. *Bull. New York Acad. Med.*, 16:618-630, (Oct.) 1940.
20. Feldberg, W.: Histamine and anaphylaxis. *Ann. Rev. Physiol.*, 3:671, 1941.
21. Fell, N., Rodney, G., and Marshall, D. E.: Histamine-protein complexes: synthesis and immunologic investigation. I. Histamine-azoprotein. *J. Immunol.*, 47:237-249, (Sept.) 1943.
22. Fisk, R. T., Small, W. S., and Foord, A. G.: The experimental use of ethylene disulphonate (allergosil brand) in the prevention of anaphylaxis in guinea pigs. *J. Allergy*, 15:14-17, (Jan.) 1944.
23. Goldie, H., and Sandor, G.: Influence de l'acétylation par le cétène sur les propriétés antigéniques et anaphylactogènes des protéines du sérum antidiptéridique. *Compt. rend. Soc. de biol.*, 126:291-295, 1937. (Quoted from Evans et al.)
24. Hare, R.: Experimental investigation into vascular reactions of susceptible skin to protein. *Heart*, 13:227-238, (Sept.) 1926.
25. Karady, S., and Browne, J. S. L.: Effect of histaminase treatment on histamine and anaphylactic shock in guinea pigs. *J. Immunol.*, 37:463-468, (Nov.) 1939.
26. Kendall, A. I., and Bishop, G. H.: Effects of histamine formaldehyde and anaphylaxis upon response to electrical stimulation of guinea pig intestinal muscle. *Am. J. Physiol.*, 85:561-568, (July) 1928. (Quoted from Evans et al.)
27. Ketcham, W. M.: Personal correspondence.
28. Knoll, A. F.: Ineffectiveness of histamine in anaphylactic shock in guinea pigs. *Proc. Soc. Exper. Biol. & Med.*, 45:606-609, (Nov.) 1940.
29. Landsteiner, K.: The specificity of serological reactions. 2nd ed. Cambridge: Harvard Univ. Press, 1945.
30. Lewis, T., and Grant, R. T.: Vascular reactions of skin to injury; anaphylactic skin reaction. *Heart*, 13:219-225, (Sept.) 1926.
31. Oppenheim, C., Sternberg, K. G., and Roman, W.: Biological Oxidation. The Hague: Junk, 1939. (Quoted from Evans et al.)
32. Peters, R. A.: The biochemical lesion in vitamin B<sub>1</sub> deficiency. *Lancet*, 1:1161-1164, (May 23) 1936.
33. Ramirez, M. A., and St. George, A. V.: A contribution to the etiology of asthma. *M. J. & Rec.*, 119:71-72, (Jan. 16) 1924.
34. Rocha e Silva, M.: Recent advances concerning the histamine problem. *J. Allergy*, 15:399-413, (Nov.) 1944.
35. Rodney, G., and Fell, N.: Histamine-protein complexes: synthesis and immunologic investigation. II. Ethyl carbamido protein. *J. Immunol.*, 47:251-259, (Sept.) 1943.
36. Roth, G. M., and Horton, B. T.: Histaminase: physiologic effects on man and its therapeutic value in medicine. *Bull. New York Acad. Med.*, 16:570-584, (Sept.) 1940.
37. Sheldon, J. M., Fell, N., Johnston, J. H., and Howes, H. A.: A clinical study of histamine azoprotein in allergic disease. *J. Allergy*, 13:18-30, (Nov.) 1941.
38. Smith, N. M.: The basic treatment of allergic conditions. *Clin. Med.*, 49:324-327, (Nov.) 1942.
39. Smith, N. M.: Cellular metabolism and its effects on allergic conditions. *Mississippi Valley M. J.*, 65:20-23, (Jan.) 1943.
40. Smith, N. M.: Associated pathologic conditions and their influence in allergic states. *Clin. Med.*, 51:323-326, (Nov.) 1944.
41. Toomey, J. A., Kriete, F. M., and Epstein, H. C.: Torantil (histaminase) in urticaria following serum administration. *J. Pediat.*, 24:290-292, (March) 1944.
42. Warren, E. W., and Findley, T.: Recent advances in pharmacology. *M. Clin. North America*, 29:438, (March) 1945.
43. Wasson, V. P.: Ethylene disulphonate in the treatment of allergic children. *Arch. Pediat.*, 60:511-517, (Sept.) 1943.

## THE MANAGEMENT OF OCCIPITO-POSTERIOR POSITIONS

JAMES R. MANLEY, M.D.

Duluth, Minnesota

THIS discussion will consider the treatment of presentations of the fetal head in which the occiput points directly or obliquely posterior, which do not rotate to the front spontaneously. A report will be made on the method of treatment used in St. Luke's Hospital in those cases of persistent posterior position which were found in 2,000 consecutive deliveries.

Williams<sup>5</sup>, in 1930, analyzed 5,176 histories and found persistent posterior positions in 9.5 per cent. Many other heads enter the pelvis in a posterior or transverse position, but the great majority rotate to the front and are never diagnosed. Williams states that only 8.8 per cent of those cases which are originally obliquely posterior rotate into the hollow of the sacrum and so become persistent occipito-posterior positions. Since the almost universal abandonment of vaginal examination early in labor the study of the mechanism of labor has been considerably handicapped, as rectal touch alone is not completely satisfactory in making an early diagnosis of the location of the sutures and fontanelles. Many physicians have an unwarranted fear of posterior positions, but if the fact is remembered that over 90 per cent of them will rotate to the front, it places any single case in a more favorable light.

The most important factor in the treatment of a case of persistent occipito-posterior position is the diagnosis. If possible the cause should be found. In the majority of cases no definite etiological factor can be proven, but it is known that lateral contraction of the outlet or a mild degree of funnel pelvis is found in about 25 per cent of those needing operation and that the weight of the babies tend to be above normal. Williams states that if the bi-tuberous diameter is 8 cm. or less, we are more likely than not to have a persistent posterior occiput. If undue delay occurs it is wise to make a vaginal examination for diagnosis or if the patient is a primipara and section is being considered, an anterior-posterior and lateral x-ray film will indicate the condition. Labor is usually prolonged, the contractions are painful and ineffective and the bag of water often rup-

tures early. These cases usually need more than the usual sedative to give periods of rest and intravenous glucose is valuable in sustaining strength during the process of cervical dilation.

Active intervention must be postponed until the cervix is dilated or can be easily and safely dilated by hand; only in very rare instances are cervical incisions indicated. Interference is rarely needed until the head has descended low enough so that a low or at most a low mid-forceps application can be made. If such descent does not occur and it is felt after due consideration that delivery should be attempted, a version is much safer than a too high forceps application. In this situation be prepared to use forceps on the after-coming head as the dystocia is probably due to a moderately laterally contracted pelvis.

If delivery is indicated after descent of the head, manual rotation of the occiput to the front should first be tried. Pomeroy's maneuver is a good method. In right occipito-posterior the attendant bends forward, standing with his face to the right thigh, the right hand is inserted into the vagina so that the palm of the hand covers the posterior occiput and the fingers grasp the head which is pushed up. An attempt is made to also engage the shoulder with the fingers and the occiput is rotated to the front if possible. In left occipito-posterior the attendant faces the left thigh and the same maneuver executed with the left hand. Aid may be given by abdominal manipulation either using the other hand or an assistant.

After rotation has been accomplished, the head is pressed down into the pelvis again from above and if desired a volsellum forceps can be used to grasp the scalp and hold the head in position while forceps are applied. Very good results are reported and precise and detailed directions have appeared in the recent literature, notably by R. A. D. Gillis<sup>3</sup>, S. S. Rosenfeld<sup>4</sup> and by George G. Cochran, Jr.<sup>2</sup>

The only danger in this form of treatment is that the cord may prolapse with the gush of fluid which occurs when the head is pushed up and disengaged, in which case a version must be done at once. I have not always succeeded with this

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maneuver, and often the head turns back into the former position in spite of efforts to prevent it. Long fingers are a great help in grasping the head and in turning the shoulders.

If manual rotation fails, forceps must be used, but if the head has been displaced upward during the attempt it is better to allow the pains to again push the head into the pelvis before using forceps. The head may be delivered by forceps as a posterior vertex, but in that case a large episiotomy should be done to avoid extensive lacerations. If the head is well flexed this procedure is recommended by some authorities in preference to attempts at rotation, as the head comes through in a more favorable position than it will if it is partially extended.

In the well-flexed attitude the small fontanelle is felt about in the middle of the pelvic cavity and the large fontanelle is concealed or nearly so up under the symphysis pubis. If the head is partially extended or in deflexion the large fontanelle is easily felt and the small fontanelle is far up and posterior. If the head is in deflexion the occiput had better be rotated to the front with forceps to avoid cranial injury.

The rotation may be accomplished by the Scanzoni maneuver using Simpson forceps which is familiar to all of you. Bill's method is similar to the Scanzoni but Bill uses a solid bladed forceps, rotates the head without traction, removes the forceps, re-applies them as in ordinary anterior position, often using an axis traction arrangement if the head is not on the floor.

I prefer the Kielland forceps in the posterior positions and also in the cases with deep transverse arrest and often use them in ordinary anterior positions. These forceps have little or no pelvic curve and have a sliding lock. There is no time for a detailed description of their use in this paper. Suffice it to say that the blades are applied over the molar bones with the front of the forceps facing the occiput wherever it points. If the occiput is directly posterior the forceps are applied upside down. If the sagittal suture is transverse, the forceps come to lie in a transverse position with the front facing the occiput. It is in making this application that the sliding lock comes into play. After the application the head is rotated without traction. Indeed it is often advantageous to raise the head a little. Rotation is usually easy. It is more difficult to get proper application. After the occiput is brought to the front, the forceps

## ST. LUKE'S ANALYSIS, POSTERIOR POSITIONS

2,000 Consecutive Deliveries

Spontaneous Rotation and Delivery.....	49
Spontaneous Delivery as Persistent Posterior.....	18
Spontaneous Rotation but Forceps Delivery.....	11
Manual Rotation with Forceps Delivery.....	6
Forceps Rotation and Delivery.....	10
(1 manual rotation failed, 8 Kielland Forceps)	
Forceps Delivery as Persistent Posterior.....	12
(one maternal death, one fetal death)	
Version.....	3
(after failure of manual or forceps rotation cervical incision one case)	
Section.....	3
(trial labor 2, disproportion 1)	
Craniotomy.....	1
(hydrocephalus)	
Spontaneous Rotation .....	49
Persistent Occipitoposterior .....	64

may need to be adjusted slightly and then the head is delivered in the ordinary way.

In an analysis of the histories of 2,000 recent consecutive deliveries at St. Luke's Hospital the following methods of delivery were found to have been used in all the cases in which posterior positions were mentioned. There were 113 such cases. It is obvious that a great many early posterior positions were not diagnosed as the occiputs rotated rapidly to the front and delivery was accomplished in the anterior positions.

There was one maternal death in this series of posterior position, a neglected case from the country with dead baby, sepsis and pneumonia on admission. The baby was delivered by forceps as a persistent posterior. There was one fetal death in this series due to intracranial hemorrhage, a delivery by forceps in a posterior position.

L. A. Calkins<sup>1</sup>, in analyzing 2,130 histories in which great care was taken to make an early diagnosis, found that occipito-anterior and occipito-posterior occurred with about equal frequency and that anterior rotation occurred in 94 per cent of posterior positions. He found that rotation occurred before complete dilatation in 25 per cent, during descent in 37 per cent, and while on the perineal floor in 37 per cent. In this series we have 64 persistent posteriors out of 2,000 cases.

In Calkins' 2,130 cases, about one-half were posterior at some time during labor and 6 per cent of these failed to rotate, giving 65.9 per cent persistent posterior, which is remarkably close to our figures. In other words, persistent occipito-posterior position occurred in the women of Kansas and Northern Minnesota in a little over 3 per cent of the total deliveries. Williams found that the same condition occurred in 9.5 per cent of the deliveries in Baltimore. Calkins states that only 6 per cent of the original posterior

positions fail to rotate to the front while Williams found that nearly 8.8 per cent failed to rotate. There is undoubtedly a larger percentage of contracted pelvis in Baltimore than there is in Kansas or Minnesota.

In an analysis made some years ago of 1,000 consecutive personal deliveries by the author, the Kielland forceps were used as rotators sixty-six times. However, this figure also included cases of deep transverse arrest which are not considered here, but which occur with about equal frequency as persistent posterior. So that, again, we have about 3 per cent of total deliveries with persistent posterior positions.

### Summary

A brief discussion of the treatment of persistent

occipito-posterior position of the fetal head is presented together with a report of the frequency and methods of treatment of this condition occurring in 200 consecutive deliveries in St. Luke's Hospital. A comparison is offered as to the frequency of posterior positions in Baltimore, Kansas and Northern Minnesota.

### References

1. Calkins, L. A.: Occiput posterior; incidences, significance, and management. *Am. J. Obst. & Gyn.*, 38:993-1001, (Dec.) 1939.
2. Cochran, Jr., George G.: Pomeroy maneuver (rotary version); an evaluation of results in 200 cases. *Brooklyn Hosp. J.*, 2:155-168, (July) 1940.
3. Gillis, R. A. D.: Vertex occipito-posterior positions. *Pennsylvania M. J.*, 43:1586-1591, (Aug.) 1940.
4. Rosenfeld, Samuel S.: Treatment of persistent occipito-posterior position by 180 degree manual rotation of occiput. *Am. J. Surg.*, 51:340-342, (Feb.) 1941.
5. Williams, John Whitridge: Analysis of 1,000 consecutive labors with child presenting in obliquely posterior position. *Proc. Inters. Postgrad. M. A. North America* (1930), 6:50-54, 1931.

## JAUNDICE—A METHOD OF DECIDING WHERE SURGICAL TREATMENT SHOULD SUPPLEMENT MEDICAL CARE

(Continued from Page 986)

Vater, have a definite clinical, pathological and laboratory profile. The period is with us now when the pancreas is being removed either in part or whole. Well-equipped surgeons have removed the entire pancreas successfully. This field is rapidly expanding aided by improved anesthesia.

(b) Caution must be used in overdiagnosing stone in the common duct or in the ampulla of Vater. Such an "accidental" finding where the surgeon expected to find cancer has led later to many hasty explorations; and often the true facts are not revealed nor are all possible surgical corrections ventured.

(c) Even where cholelithiasis is present it is possible that these stones are not the primary cause of the jaundice. Note Cases 9 and 10. The patient may have an intercurrent hepatitis. Operation should be postponed.

(d) Trauma to the liver ductal system results in some variation of the blueprint of stone or tumor. We have had no recent instance to fit into this report. Usually there will be the situation developing after operations on the gall bladder and immediate trouble. The common duct is cut or its drainage results in obstructing scars.

(e) Surgeons must be slow to assume that an early insidious jaundice is due to outside pres-

sure of glands on the common duct. Most cases so diagnosed are instances of primary hepatitis.

(f) There is a place for diagnostic biopsies of the liver where hepatic cirrhosis is suspected. For the review here given we have *not* needed it. It must be recalled that jaundice is not an early sign or a common finding in cirrhosis.

### References

1. Clagett, O. T.: Personal communication.
2. Dennis, C.: Modified Whipple operation for cancer of head of pancreas. *Surg.*, 12:201, (Aug.) 1942.
3. Hanger, F. M.: Serological differentiation of obstructive from hepatogenous jaundice by flocculation of cephalin-cholesterol emulsions. *J. Clin. Investig.*, 28:261-269, (May) 1939.
4. Lichtman, S. S.: Diseases of the Gall Bladder, Liver and Bile Ducts. Philadelphia: Lea & Fehiger, 1942.
5. Lord, J. W., and Andrus, W. DeWitt: Differentiation of intrahepatic and extrahepatic jaundice; response of plasma prothrombin to intramuscular injection of menadione (2 methyl-1, 4-naphthaquinone) as diagnostic aid. *Arch. Int. Med.*, 68:199-210, (Aug.) 1941.
6. Quick, A. J.: Intravenous modification of hippuric acid test for liver function. *Am. J. Digest. Dis. & Nutrition*, 6: 716, 717, (Dec.) 1939.
7. Roberts, W. M.: Blood phosphates and van den Bergh reaction in differentiation of several types of jaundice. *British M. J.*, 1:734-738, (Apr. 29) 1933. Variations in phosphatase activity of blood in disease. *J. Exper. Path.*, 11:90-95, (April) 1930.
8. Steigman, Frederick, and Dyneiwicz, Josephine M.: Influence of phenolphthalein ingestion on red blood cell resistance to hemolysis. *Am. J. Digestive Dis.*: 11:279-281, (Sept.) 1944.
9. Watson, C. J.: Studies of urohelinogen, improved method for quantitative estimation of urohelinogen in urine and feces. *Am. J. Clin. Path.*, 6:458-475, (Sept.) 1936.
10. Watson, C. J.: Studies of urohelinogen, urohelinogen in urine and feces of subjects without evidence of disease of liver or biliary tract. *Arch. Int. Med.*, 59:196-205, (Feb.) 1937.
11. Watson, C. J.: Personal communication.
12. Whipple, A. O.: Surgical treatment of cancer of the ampullar region and head of pancreas. *Am. J. Surg.*, 40:260, 1938.
13. Whipple, A. O.: Present-day surgery of the pancreas. *New England J. Med.*, 226:515, 1942.

# CLINICAL-PATHOLOGICAL CONFERENCE

## ADRENAL HEMORRHAGE IN THE NEWBORN

CARL O. KOHLBRY, M.D., AND ARTHUR H. WELLS, M.D.

Duluth, Minnesota

We wish to present a study of three cases of adrenal hemorrhage in newborn infants. These represent ten years' experience in a general hospital with a total of 9,500 births, among which were 216 stillbirths and 236 newborn deaths, with 90 per cent necropsies. Our criterion for hemorrhage in the adrenal is a minimum of a microscopically proved complete disruption of the regular irregularity of the normally degenerated cortical cells and their surrounding congested sinusoids by massed red blood cells. Gross swelling and hemorrhagic discoloration of the central area is not considered sufficient evidence of hemorrhage.

### Case Presentations

Case 918 was a full-term, 4,515-gram, white, male infant, rotated with Kielland's forceps and delivered after a rather prolonged labor, by Dr. Arnold Swenson. No resuscitation was necessary and the infant appeared in good condition until about four and a half hours after delivery when his color was found to be poor and dusky. The skin was cold and clammy. He was crying loudly at the time. He vomited large amounts of dark brown material twice on his second day. His temperature reached 100.8°F. At this time he appeared acutely ill, cyanotic, and had a rapid, jerky respiration. His skin was dry. There were some moist râles in the bases of the lungs. The abdomen was distended and tympanitic on the left side, but dull over the right flank. There did not seem to be any tenderness over the liver. He was given 60 c.c. of whole blood intramuscularly during this second day. X-ray examination revealed no pathology in the lungs. During the last two hours respirations became shallow and gasping. The cyanosis continued in spite of oxygen therapy and stimulants. The clinical diagnosis made by Dr. S. N. Litman was adrenal hemorrhage of the newborn.

A necropsy revealed an estimated 250 c.c. of blood infiltrated throughout the retroperitoneal tissues on the right side. There was possibly 50 c.c. of bloody watery fluid in the peritoneal cavity. Fragments of the right adrenal were found scattered in the blood clot in the vicinity of the normal site of the right adrenal gland. Histologic sections revealed extensive hemorrhages and necrosis of cortical tissue with moderate neutrophilic infiltration in small areas. There rarely remained a few viable appearing cortical cells immediately under the capsule. There was a small hemorrhage in the left adrenal gland, totalling about 3 c.c.

There were a few petechiae in the lungs and on pleural surfaces. No other evidence of hemorrhage or disease process was found.

Case 1510 was a 3,925-gram, full-term, well-developed, white, male infant. Low forceps were applied by Dr. W. A. Coventry. The child was somewhat cyanotic but quickly responded after having been given carbon dioxide. He appeared entirely normal excepting for a slight lethargy noticed by Dr. O. W. Rowe. There was also a slightly more than usual weight loss. Routine hematologic studies and temperature readings were normal. Three hours and a half before the child's death it was noticed that his condition was very poor. He was cyanotic and markedly icteric. The pulse was 130. Respirations were shallow and rapid. Breath sounds seemed abnormally coarse, almost bronchial, in type. An x-ray of the lungs was negative for disease process. The clinical impression was intracranial hemorrhage or congenital heart disease. The infant became rapidly weaker, respirations irregular, before cessation of breathing.

The necropsy revealed a right adrenal gland swollen and rounded to from 1.5 to 3 cms. in its dimensions with a deep red color of the outer surface and a dark red hemorrhagic appearance of the entire cut surface. Histologic sections reveal extensive necrosis and hemorrhage in the cortical tissues (Fig. 1). There remained a few viable appearing cortical cells under the capsule. The left adrenal was quite normal in its gross and microscopic appearance. No other disease process was found in the brain or other organs.

Case 3199 was a 2,610-gram, white, male fetus, who had a rapid spontaneous delivery under the care of Dr. F. H. Magney. The child appeared entirely normal except for slight cyanosis from which he recovered after a short period of artificial respiration. The infant appeared to follow a normal course until he was found with a cyanotic, cold skin, dead in the crib three days after birth.

A necropsy revealed no significant changes except for an approximate 6 c.c. hemorrhage in the left adrenal gland. There were also very slight hemorrhages in the lungs, stomach, and kidneys. No other explanation for the death could be found.

### Etiology

Hemorrhage is the result of one or a combination of three factors including defective blood clotting mechanism, internal disturbance in the vessel wall, and external

From the Department of Pathology, St. Luke's Hospital, Duluth, Minnesota.

trauma to the vessel wall. Any combination of these factors may play an important part in adrenal hemorrhage of the newborn. The relative importance of these three factors may vary from case to case. It may be that the altered blood clotting mechanism, a lowered prothrombin value (hemorrhagic disease of the newborn), may be of importance.<sup>1</sup> Increased capillary permeability as the result of a spontaneous physiologic involution in the reticular and fascicular areas of the cortex immediately before or after birth (Fig. 2) must be a fundamental etiologic factor. In spite of the recorded blood supply of six times its own weight in a minute, the greatest of any organ in the body, one can see evidence of red blood cell stasis and hypoxia in the engorged and frequently unsupported capillaries of the central area of the suprarenal. The endothelial cells lining these capillaries occasionally contain much hemoglobin pigment apparently as the result of destruction of red blood cells, possibly due to disorganization of blood flow. The engorgement and dilatation of sinusoids may be so great as to make it a difficult matter to recognize small hemorrhages, thus causing disagreement among pathologists and variations in statistics. Three cases originally considered adrenal hemorrhages of the newborn were culled out of our series during this study of a more exacting definition of the term adrenal hemorrhage. An explanation for the physiologic involution of the adrenal is not agreed to by authorities. The often repeated theory that the increased oxygen tension of the newborn causes cortical degeneration is not tenable because the involution is frequently advanced before birth and the majority of hemorrhages appear to occur at the time of birth. Asphyxia<sup>3,18</sup> during and after labor is generally believed to increase capillary permeability.

Given an infant with extremely friable and congested adrenal glands and possibly a prolonged prothrombin time, one has an ideal situation in which the stresses and strains of labor and resuscitation may well start a serious hemorrhage. The importance of trauma starting these hemorrhages has been repeatedly mentioned.<sup>5,10,11</sup> Compression of the inferior vena cava between the liver and the vertebral column, thrombosis of suprarenal veins, acute infections, syphilis, eclampsia, and sudden changes in blood pressure due to crying, vomiting, coughing, et cetera, have been described as possible etiologic factors.

#### Pathologic Anatomy

The adrenals may be swollen and more than twice their average size (5 grams) as a result of unusually severe physiologic involution without there being microscopic evidence of hemorrhage. This manifestation may be either bilateral or unilateral. From this extreme physiologic disturbance to extensive retro-peritoneal and intraperitoneal hemorrhages with exsanguination similar to our case 918, there are all gradations of hemorrhages possible. Undoubtedly many small and especially unilateral hemorrhages may go completely unrecognized, and in some instances may appear as healed and occasionally pigmented scars in later life. The great majority of deaths due to adrenal hemorrhage are bi-

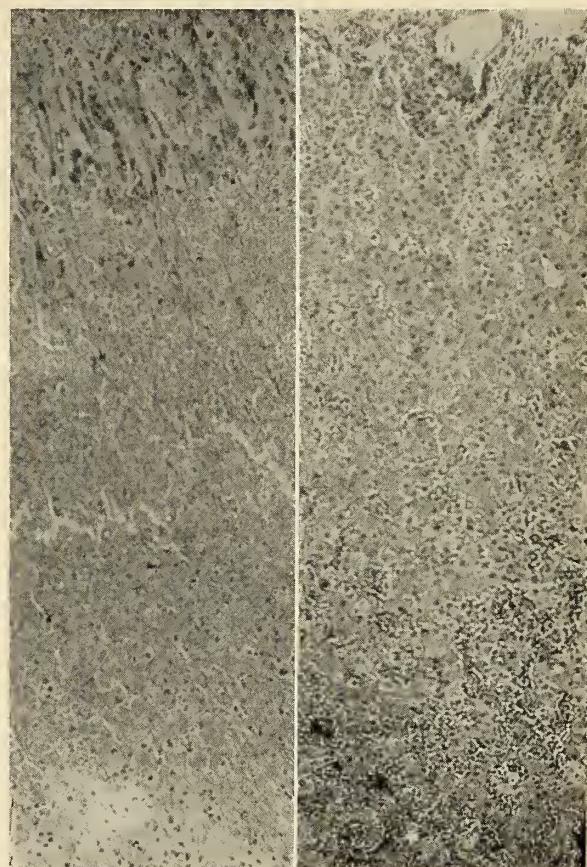


Fig. 1. (left) Extensive necrosis of cortex following hemorrhage sparing narrow subcapsular layer of cortical cells. From case 1510.

Fig. 2 (right) Physiologic involution of adrenal medulla in the newborn. Note congested sinusoids and degenerated cords of cortical cells.

lateral hemorrhages. Unilateral lesions causing death must be associated with some reflex suppression of the hormonal activities of the contralateral organ. One can inject from 10 to 20 c.c. of blood into a normal adrenal of the newborn before its capsule will burst.

#### Pathologic Physiology

The important physiologic alterations described in the literature are the result of blood loss and decreased cortical endocrine production. The loss of the medullary hormones does not appear to be of importance, at least not in the newborn, where the medullary tissue is very poorly developed. Acute cortical hormone deficiency<sup>5,14</sup> results in alterations in: the functions of the central nervous system, body metabolism, muscular efficiency, cardiovascular function, gastro-intestinal stability, renal competency, carbohydrate, sodium and potassium metabolism, skin and activities of other glands of internal secretion. The effects of loss of cortical endocrines on body temperature appears to be the result of a release of their normal counter action upon the metabolic stimulating activities of the thyroid.<sup>5</sup> The cortical hormones play an important role in regulating respiration either by directly furthering the process

## CLINICAL-PATHOLOGICAL CONFERENCE

TABLE I.

Case	Clinical Manifestations										Pathology		
	Resuscit.	Sex	Respir.	Pulse	Temp.	Abdomen	Skin	Clin. Diag.	Death	Left Adrenal	Right Adrenal	Other Hem.	
918	Not necessary	Male	Rapid Jerky	—	Reached 108.8°	Distended Dull in rt. flank	Cyanotic, cold clammy	Adrenal hemorrhage	36 hr s.	Hemor. 3 c.c.	Rupture hemor. 250 c.c.	Petechia Pulmon.	
1510	CO <sub>2</sub> given	Male	Labored Rapid	130	Normal		Cynoctic	Cerebral hemorrhage Br. pneum.	6 days	None	5 c.c.	None	
3199	Artif. respiration	Male	Normal	—	Normal	Normal	Cyanotic Cold	None	3 days	6 c.c.	None	Mild pulmon. G.I.T. kidney	

of oxygen utilization in the tissues or by influencing the nervous center of respiration.<sup>12,14,17</sup> Hyperpnea is a frequent result of acute cortical hormone deficiency. The counter activities of cortical hormones and insulin have been demonstrated by many authorities. Deficient cortical hormones may cause serious hypoglycemia in either the acute process of adrenal hemorrhage or the chronic process of Addison's disease.<sup>7,15,18</sup> In adrenalectomized animals, the kidneys begin to fail and protein metabolites appear in increased amounts in the blood.<sup>7</sup> These changes have also been described in association with adrenal hemorrhage of the newborn.<sup>5,15</sup>

**Clinical Recognition**

Symptoms and signs of adrenal hemorrhage of the newborn may be classed in two groups: those which are the result of the hemorrhage, including both general and local effects, and those resulting from cortical insufficiency. Goldzieher and Gordon<sup>5</sup> present the following classification of symptomatology: (1) symptoms of acute adrenal insufficiency; [a] endocrine: rapid respiration, high temperature, rash (purpura or petechia), metabolic changes, convulsions and cyanosis; [b] associated symptoms: gastro-intestinal disturbances such as vomiting, diarrhea, and abdominal pains and nervous conditions such as coma, convulsions and twitching; (2) symptoms of adrenal hemorrhage; [a] general: shock, collapse, weak and irregular small pulse, cold extremities, air hunger, and increasing pallor; [b] the abdomen is generally distended and gives a boggy sensation, abdominal pain, palpable tumor in one or both kidney regions, peritoneal symptoms with intra-peritoneal hemorrhage. In the eighty-one cases of their review the more common manifestations in the order of their frequency were hyperpyrexia (50 per cent), rash, increased respiratory rate, convulsions, cyanosis and vomiting (25 per cent). The less frequent findings were pallor, abdominal distention and bogginess, palpable abdominal tumor, hemoperitoneum and jaundice.

These authors stress the importance and frequency of a typical clinical picture very suggestive of pneumonia, with rapid respirations and increased temperature but without physical findings of pulmonary infection "pseudopneumonia of the newborn." The onset is more often immediately after birth but occasionally suddenly developing a few days later. The infant generally re-

fuses nourishment, may be apathetic and cyanotic, and develops a petechial rash over skin surfaces. There may be a mass, or masses, palpable in the kidney areas, or the abdomen may become boggy and distended. Vomiting, convulsions, twitchings, jaundice and diarrhea may be present. A second clinical picture is that of a child with a sudden onset of signs of shock, collapse and death within a short period of from twenty-four to forty-eight hours. In the majority of cases the clinical picture could be called the newborn version of the Waterhouse-Friderichsen's syndrome<sup>4,9,16</sup>, which is more completely manifest in older children and adults. There is also a distant relationship to Addison's disease with its insidiously developing cortical adrenal insufficiency and its resultant widespread muscular weakness, pigmentation of the skin, hypotension, hypoglycemia, and metabolic disturbances in water, sodium and potassium. Adrenal hemorrhage of the newborn is recognized before death much more frequently than a few years ago. Laboratory procedures of possible assistance may reveal a hypoglycemia, mild azotemia, leukocytosis, decreased blood specific gravity, and a progressive anemia. Responses to specific therapy may have some diagnostic significance.

**Treatment**

Reported cures in the literature are rapidly becoming more numerous.<sup>1,2,6,15</sup> Treatment should be based upon combating: (1) internal hemorrhage, (2) lowered prothrombin value of the blood, (3) cortical adrenal insufficiency, 4) hypoglycemia. The prophylactic use of vitamin K in the mother a few hours before delivery may prove to be of importance in preventing hemorrhagic disease of the newborn, and adrenal hemorrhage.<sup>1</sup> In case 3199 vitamin K was given to the mother three hours before delivery. The other two cases occurred before the vitamin K era. Methods of resuscitation, avoiding blows and pressure over the adrenal areas are fundamental. Clifford<sup>1</sup> reports four cases cured out of eight newborn infants with suprarenal hemorrhage. He stresses the importance of early recognition and treatment with blood transfusions. Potent cortical extracts, 10 per cent glucose, and vitamin K may be of great importance in different cases.

(Continued on Page 1042)

## HISTORY OF MEDICINE IN MINNESOTA

### NOTES ON THE HISTORY OF MEDICINE IN HOUSTON COUNTY PRIOR TO 1900

By NORA H. GUTHREY  
Mayo Clinic  
Rochester, Minnesota

(Continued from the November Issue)

Always an earnest student, Dr. Johnson from early years made constant use of his exceptionally fine medical library, and it is evidence of his perception and scientific imagination that he early possessed and applied a greater knowledge of asepsis and antisepsis than was usual among physicians of his period of greatest activity. A skilled obstetrician, he successfully delivered 3,000 babies. Throughout his career he gave his services freely to the poor and helpless, and he unceasingly battled the cultists and quacks, both as an individual physician and as a representative of the medical associations with which he was affiliated. He was a charter member and once the president of the Blue Earth Valley Medical Society; a member of the Southern Minnesota Medical Association, the Minnesota State Medical Association and the American Medical Association.

In 1883, at Houston, Dr. Johnson was married to Ruth Ann Warner, a teacher in the schools, daughter of Albert and Mary Warner, of Chicago. Dr. and Mrs. Johnson had two children, Nina Foy (Mrs. Robert S. Wallace, of St. Paul) and Donald Warner Johnson, of Fairmont, since 1921 a physician and surgeon, graduate of the University of Chicago. Mrs. H. P. Johnson died in Fairmont on April 15, 1930.

Dr. Johnson's early medical practice, perhaps especially in the Houston days, was eventful and varied. The blizzards of those winters did not keep him from his patients; he often cut fences and drove overland, borrowing one team after another from farmers en route as the horses became exhausted from struggling through the snow. He loved horses, often rode on horseback, and kept fine trotters for driving. In later years he owned the third motor car in Martin County and when motorcycles became available, he used one.

With especial regard to the days in Houston County his daughter wrote: "I am sorry that years ago I did not write down the tales Father often told of his trips and experiences. Of course, he was the old type of family doctor we hear so much about now. He was a very skillful surgeon and was proud of his record of not losing cases from infection as was so common in the early days of medicine. He had a fine library, read the medical journals, went to conventions and kept abreast of the times until his health began to fail. In those days in Houston there were no nurses or hospitals. One wonders how surgery could have been successful."

And from his son came the following lines: "Dr. H. P. Johnson has been a most successful, aggressive individual, both in medical practice and in all his activities. He had just begun a biography of his most interesting career when the infirmities of age stepped in and destroyed the only source of record of this vast medical and human experience."

In frail health during his last few years, Dr. Henry Porter Johnson died in Fairmont on March 31, 1943.

## HISTORY OF MEDICINE IN MINNESOTA

**Edmund Burke Johnston**, a younger brother of Dr. Henry P. Johnson (as noted previously, both spellings of the surname are correct), was born on March 11, 1862, at the farm home of the family at Pleasant Hill, Fremont Township, Winona County, Minnesota, the son of David Johnson, a farmer of English descent who was born in New Hampshire, and Almira Corey Johnson, of English and Scotch ancestry. Almira Corey was born at Belchester, Massachusetts, the daughter of Alpheus P. Corey, a Baptist minister and cobbler. Some of her forebears fought in the American Revolution; others of them founded the Monroe Tavern at Lexington, Massachusetts, which in recent years has been a historical museum.

Of all of the eight brothers and sisters of Edmund Johnston, data is not at hand, but it is known that Willis when a young man went to Kansas and was carrying mail there when the country was a wild frontier. Augustus died in infancy. Jabez in his earlier years taught school and in later life made his home at Madison, Wisconsin. David lived at White Rock, South Dakota, and at one time was a member of the state legislature.

The young Edmund B. Johnston went to Boynton Corners school and to the Mann school near his farm home in Winona County. For a year or two he was a student at the State Normal School at Winona, although not a graduate, and subsequently he taught school in Montana and in Yucatan, Houston County, Minnesota. In September, 1888, he entered Rush Medical College, as his brother Henry had done ten years earlier, and in 1889 he received his degree. After further study at the Jefferson Medical College in Philadelphia he returned to Minnesota and in 1893 first practiced medicine in the community of Hokah, in Houston County. There he met and married his first wife, Alice L. Dunham. The only child of this marriage, Ned Johnston, became a railroad employe and a minister of the church of Latter Day Saints. Some years later Dr. Johnston was married to Effie Sinclair, of Money Creek, Houston County, who had been a teacher in Lanesboro and Rushford, Fillmore County. Of the three children of the second marriage, one died in infancy. The others, Esther Johnston Sather and Stanley Johnston, both of them teachers (Mrs. Sather before her marriage), were living in 1942.

From Hokah, Dr. Johnston moved to Caledonia, where he built up a large practice and continued to grow in the esteem of the community. After 1896 he went to Fairmont, for three years to be associated with Dr. Henry P. Johnson, who bought his brother's practice when Dr. E. B. Johnston decided to practice in Benson. After the years in Benson, Dr. Johnston followed his profession in Donnelly and Wheaton, where he was living when these notes were compiled. He not only has practiced medicine successfully but also has engaged in farming, stock breeding and poultry raising, pursuits which he has regarded as side lines or hobbies.

**Harvey B. Laflin** was one of the early physicians in and near Caledonia, Houston County. The only definite information about him that has been gleaned is that he served as county coroner from January 1, 1860, to January 7, 1862, and again from May 13, 1862, to January 9, 1863; and that he practiced medicine in the township contemporaneously with Drs. O'Connor, Dustin, and McKenna. Some of the earliest settlers in the county were the Laflin family, of Winnebago Township, and it is possible that they and Dr. Laflin were related. A note about Eliakim Laflin was included in the narrative that precedes these biographical notes.

**John Byers LeBlond**, who was born at Celina, Ohio, probably about 1824, arrived in Brownsville, one of the oldest of Mississippi River towns in southern Minnesota and the port of greatest and most diversified activity, in 1856 or 1857, as nearly as can be determined. He had been graduated from the Willoughby Medical College, State of Ohio, in March, 1848, and was both physician and druggist. Young, ambitious, apparently well trained for that period, Dr. LeBlond entered early into the activities in civic, educational, medical and military affairs, of the new county and the territory, soon to be a state.

Although it has been variously stated that this pioneer physician came to Brownsville in 1860 or 1862, it is obvious that he became established there several years earlier, because in 1857 and 1858 he was one of the three who were elected to represent the region, then the tenth district, in the state senate. When, in the apportionment of 1860, Houston County was placed in the thirteenth district, he went to the legislature as a representative and in the following year served a second term.

Dr. LeBlond's career was interrupted by the Civil War. In 1862 he joined the First Volunteer Regiment of Minnesota with which he served as assistant surgeon, succeeding Dr. D. W. Hand, of St. Paul, and later was promoted to first surgeon. He remained with that regiment until the muster out on April 29, 1864, and his honorable discharge on May 5, a week later. A year later he re-entered the army, and when the First Battalion of Minnesota was organized, he was mustered in as surgeon on May 17, 1865. He was mustered out finally on the date, July 14, 1865.

In 1868 Dr. LeBlond was serving as superintendent of schools of Houston County, as well as engaging in medical practice, and there is evidence that at all times he was representative in matters of public health and of organized medicine. In 1869 he became a member of the Minnesota State Medical Society, which was revived in that year after a long period of lying dormant since its organization in 1855. In 1870 he was appointed a member of its Committee on Epidemics, Climatology, and Hygiene and also was chosen as one of its nine delegates to the annual meeting of the American Medical Association. In 1872 he was a member of the Committee on Diseases of the Nervous System and in 1876 of the Committee on Medical Education. Of fraternal bent, when the Brownsville Masonic Lodge No. 73 (A. F. and A. M.) was chartered on January 15, 1869, he was appointed Master. Dr. J. M. Riley, a contemporary in Brownsville, was made Senior Warden.

Sometime in the seventies the first frame house that had been built in Brownsville, in 1850, was remodeled and became the home of Dr. LeBlond and his family. Of Mrs. LeBlond information has not been available. It is interesting to try to imagine what life in the hustling pioneer river town, strung thinly along the narrow ground between the bluff and the water, must have been to her, as the wife of a pioneer physician, and to other women of the little community who brought up their children under conditions of unrest and even danger. Dr. and Mrs. LeBlond had two sons, Horace W. LeBlond (who in 1877 was postmaster at Brownsville) and Clyde LeBlond, both of whom went to Dakota, probably in the late seventies. They were in partnership in a drug store at Chamberlain until Clyde went into newspaper work.

In 1879 or at the beginning of the eighties, when Brownsville's great day had drawn to a close, Dr. LeBlond went to Sioux Falls, Dakota Territory. It was from there, it is believed, that he sent in his last report on diphtheria

in Minnesota from November 1, 1879, to November 1, 1880, to the Minnesota State Board of Health. His name appears in the list of physicians "who, in answer to the circular of the committee, have kindly furnished most of the data for this report" (published in 1881). On the roster of physicians of Dakota, when the medical code of 1869 was replaced by the medical practice law of 1885, appeared the name of J. B. LeBlond, as of June 19, 1885, of Sioux Falls, Minnehaha County.

In Sioux Falls Dr. LeBlond had offices in the Carpenter Hotel Building, and there he continued to practice medicine until his death, which was caused by cardiac disease, in 1893 (?). Not until 1899, however, was his name included in the list of deceased members of the Minnesota State Medical Society, of which, since 1882, he had been an honorary member. He was known as an able practitioner, kindly and generous with his service to the poor. At his funeral there were present many whom he had befriended.

**Andreas (Andrew) Pederson Lommen** was born on a farm near Spring Grove on May 10, 1867, the son of Mr. and Mrs. Peder Lommen, both natives of Norway, who were among the earliest settlers in the county. His father came to America in 1851, his mother, Maria Arnston, in 1861. Andreas Lommen began his early education in the rural school near his home and later studied at Gales College at Galesville, Wisconsin, for two years. During 1890 and 1891 he taught a country school in Spring Grove Township before beginning the study of medicine. After taking his degree in medicine and surgery at the University of Minnesota in 1895, although certificated in Houston County and although he practiced there to some extent, he resided in Fillmore County and was a leading physician of that county, for two years at Mabel and for forty-five years at Lanesboro. He died at the Veterans' Hospital at Milwaukee, Wisconsin, on September 16, 1942. In notes on the lives of pioneer physicians of Fillmore County there is included fuller comment on Dr. Lommen's career in that region.

**Edward MacDonald** was graduated from Rush Medical College in 1879. The record available concerning him is extremely scanty. In the Official Register of Physicians of Minnesota (1883-1890) his name appears twice: In the alphabetical section as living in New Albin, Iowa, and as having received Minnesota license No. 1428 (R) on May 28, 1887, and in the section by counties as a resident of Spring Grove, Houston County. It is probable that he was briefly in Houston County and that he settled in Iowa. By 1809 he was living in Cuba, Wisconsin.

**Joseph Mark**, in 1871 a graduate of the Kownow Medical College in Russia, on October 15, 1883, then a resident of Minneapolis, received certificate No. 166 (R) to practice medicine in Minnesota. At about this time a Dr. Joseph Mark, short and dark-complexioned, believed to have been the same man, set up practice as a physician and surgeon in Caledonia, Houston County, where he remained, according to directories, into 1887. It has been recalled in the village that he was known there to have been duly certificated and that "he didn't stay here very long." In 1896 Dr. J. Mark was in Lyle, Mower County, and subsequently he was in Minneapolis.

**Oliver McGuffey** perhaps was in the village of Yucatan in the late seventies.

**William Henry McKenna** was born at Wheeling, West Virginia, on May 1, 1843, one of the seven children of William Henry McKenna, native of Ireland, and Mary Ann Quirk McKenna, who was born in Scotland of Scotch-Irish parents. His sisters were Maggie, Kate, Sarah, Alice, and Mary Ann.

He had one brother, Jone. At the time these notes were written none of the family was living.

After completing his preliminary education in the schools of his native town, William H. McKenna studied medicine under the preceptorship of Father Quirk, also of Wheeling. It was on the outbreak of the Civil War, while he was still studying medicine, that he joined the Confederate Army, with which he served as a surgeon until he was taken prisoner at Paris, Kentucky, and sent to Chicago to await an exchange of prisoners. After the close of the war he continued his medical study at Richmond, Virginia, and thereafter, it has been stated, he was delegated by the government to go as a physician into the Northwest.

In 1872 Dr. McKenna took postgraduate work at the Medical School of the University of Michigan at Ann Arbor and at the same time served on the faculty as assistant professor of anatomy. In that year on completion of his work at the university, he obtained his license to practice medicine in Minnesota and settled in Caledonia, Houston County. In this period he was married to Mary Ellen King, a teacher by profession, who was born at Louisville, Kentucky, of Irish parents. Dr. and Mrs. McKenna had four children, Paul, Mayphine, Estella, and Jay.

In Caledonia Dr. McKenna entered into active professional life in the conduct of a widespread practice and in civic responsibility. At one time he was local health officer and for nearly a year, in 1881, he served as coroner of Houston County. It is remembered in the village that he kept a large stable, in order that he might answer calls at all times in all seasons and at the same time protect his unusually fine and beautiful horses, which he cherished, by changing teams every few hours. In later years his elder son Paul accompanied him on his rounds, driving the team.

In 1883 Dr. McKenna moved with his family from Caledonia to Austin, in Mower County, and in that town and community he continued in heavy general practice. An able and ethical physician throughout his career he was identified with medical progress. In Caledonia, as noted, he held professional offices of responsibility. In Austin, he served as city physician. He was a member of the Mower County Medical Society (the Houston County Society, as stated, was not organized until long after he left the county), the Minnesota State Medical Association, and the American Medical Association. He was a member of the Catholic Church and a generous contributor toward charitable and educational institutions. Outside his profession his chief interests lay in farming and in his favorite hobby of fishing.

When Dr. William Henry McKenna died in Austin on April 26, 1932, of coronary disease, he was survived by his sons and daughters. In the early nineteen forties Paul K. McKenna, a physician and surgeon, was in practice at Mount Sterling, Kentucky. Jay K. McKenna, a physician and surgeon, and Mayphine McKenna Graf, and Estella McKenna were in Austin.

**Ingvold [sic] Muller**, a pharmacist and reputedly a physician, for he was called "doctor," is said to have been a resident of Spring Grove Township beginning in the late fifties.

*(To be continued in January, 1946 Issue)*

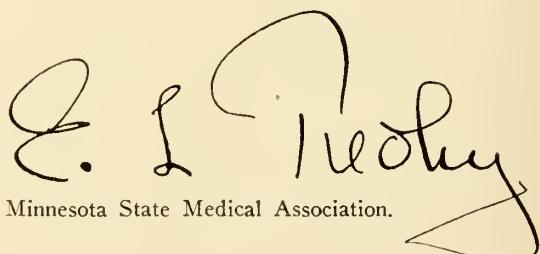
## President's Letter

This is your 1945 President's final and farewell letter. Just as I took over from Med. Jones, so I yield to the gifted and gracious Ed. J. Simons of Swanville. I bespeak for him the same generous support from the membership, the committees, and Mr. Rosell's office that has expedited the duties of my interesting year of service.

It is evident that I have no obvious accomplishments to point to; none such was either outlined or contemplated. It is implicit in the purposes of our Association to battle crises, meet stern opposition and yet plead for survival by dint of a service so obvious that the judgment of the just never fails us. I have simply fitted into that progression or profile that, decade by decade, yields the history of our guild in Minnesota. That continuity stems from a coherent and publicly recognized professional group dedicated to the prime purpose of supplying our people with a medical service second to none, which must not deteriorate, come what may. Let war devastate and confuse all normal values; let political opportunists summon all possible critical adjudgments to camouflage their prime purpose—to put us under bureaucratic bondage; let the occasional unwise and injudicious within our ranks display greed, avarice and unethical personal relationships—still there remains so much of zeal for the public weal and love of scientific advancement among us that despite current confusion, the outlook was never so exhilarating or inspiring.

This sounds Churchillian; but it comes from the heart and is (of all expressions) thoroughly non-defeatist. Let us adjust our medical prepayment plan; reinduct our medical Veterans into civil practice; do our share to implement the private hospitals, in which we serve, into the general scope of medical education. Of all fields of professional activity, medicine needs peace most of all.

May the season's appeal—"Peace on earth to men of good will" conceal no demeaning reservations. Hate and healing are incompatible.



E. L. Nealey

President, Minnesota State Medical Association.

# ♦ Editorial ♦

CARL B. DRAKE, M.D., *Editor*; GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

## THE NEW WAGNER BILL BACKED BY PRESIDENT TRUMAN

WE HAD been led to believe that there was little danger of the passage of the third Wagner-Murray-Dingell Bill, which had been submitted to Congress early this year. The submission of a new bill on November 19, labeled the National Health Act of 1945, by these same Senators and Congressmen with a message from President Truman requesting its passage came, therefore, as a bombshell.

According to Arthur Sears Henning "The compulsory health insurance plan is chiefly the brain child of Isadore S. Falk, research director of the Social Security Board, and Michael M. Davis, a member of the CIO Political Action Committee." Neither the President nor Mr. Wagner nor the Social Security Board made any attempt to consult representatives of the American Medical Association in regard to the bill. In spite of protestations by the President and Mr. Wagner that the bill does not constitute socialization of the practice of medicine, it would do just that, and is the effort on the part of a socialistically minded minority to force socialism on our country contrary to our Constitution, which guarantees private industry. The placing of American medicine under bureaucratic control in Washington is just the first step in the regimentation of industry, finance and, eventually, labor itself.

The need for governmental assistance in caring for such illnesses as tuberculosis and mental disease has long been recognized by the profession. The Hill-Burton Bill providing for federal subsidy for the construction of hospitals where needed and where funds from private contribution or local taxes cannot provide for such a need has been approved by the profession. Physicians favor increased scientific research in cancer and mental diseases particularly. Two bills for a National Research Foundation are now in Congress. The medical profession realizes the importance of having such a foundation free from political appointments and control. For this rea-

son, the Foundation Bill (S. 1285) seems the more desirable.

The medical profession, like the public in general, favors insurance as a protection against various hazards, the cost of accidents and sickness included. It believes that private insurance against medical cost is the answer. Insurance against hospital costs has grown by leaps and bounds during the past ten years. Progress is being made in the provision of insurance to cover other costs of illness such as doctors' fees. Besides policies provided by insurance companies, the physicians in a number of states and smaller units have organized non-profit corporations to provide such insurance. Lack of experience has made expansion slow, but it has been shown that accurate rates can be determined for surgical procedures and obstetrics and certain types of illnesses. Our state committee has been preparing a voluntary prepayment medical insurance organization for Minnesota. The recent approval by the A.M.A. House of Delegates of such an organization on a nationwide basis is the answer of the medical profession to the national need for such insurance.

If a bill similar to the new Wagner-Murray-Dingell Bill is passed, the cost to taxpayers will run into the billions, much of which will be used in administration. The President mentioned a 4 per cent tax on the first \$3,600 earned by an employe. The new bill, however, makes no such mention. Was this omission deliberate so that the measure could be referred to the Senate Committee on Education and Labor, of which Senator Murray is chairman, instead of the Senate Committee on Finance? The cost is sure to be several times the 4 per cent mentioned.

The profession has insisted on the right of an American citizen to free choice of physician. Many, while insisting on such right as far as they are concerned, voice the opinion that this is not so important for the other fellow. We predict that many and perhaps most of the profession would exert their right under the proposed bill to refuse to participate. Individuals who make use of the

services of such physicians will therefore pay taxes from which they will derive no benefit.

The medical profession is convinced that a healthy development of volunteer prepayment medical insurance rather than the proposed compulsory governmental plan, which is sure to prove a costly experiment, is the answer to the admitted need for such insurance.

### HOSPITAL NEEDS IN COUNTRY DISTRICTS

THE provision of effective medical care in the more sparsely settled areas of our country has long been a problem and continues to be one, although the advent of the automobile and good roads has changed the picture of early days in certain areas. Nevertheless, the problem still exists, and the solution is not simple.

The young medical graduate is inclined to locate in the more thickly settled areas where hospitals are available. The hospital provides laboratory aids and furthers medical consultation, both of which promote better medical practice. On the other hand, the mere construction of hospitals in the absence of medical and technical personnel would be an economic waste. And there, as we see it, lies the crux of the problem.

Heretofore, when a group of physicians felt the need for a hospital, funds have been collected by popular subscription and a hospital built. Too often the hospital has failed to meet expenses and has eventually ceased operation. It is to meet the hospital needs of communities which are unable to finance hospital construction and perhaps maintenance, either by popular subscription or local taxation, that the Hill Burton Hospital Construction Bill was submitted to Congress and approved by the medical profession. The revised bill (5191) has been approved,\* apparently after considerable study, by the Senate Committee on Education and Labor. Revisions rightly include certain limitations on the funds to be made available and rather surprisingly eliminate "and medical care" from the definition of the term "public health center" in the original bill as "a publicly owned facility for the provision of public health services and medical care." Are these public health centers to be constructed in sparsely settled areas to be devoted to public health alone and no medical care whatever?

It would seem obvious that the need in sparsely settled areas is for a certain type of hospital to provide for at least obstetrical care, injuries, and emergency operations such as the general practitioner would handle and not complicated procedures which would require the services of a specialist. The facilities of the larger centers would be the logical place for the handling of such needs. We doubt whether the limitation of such centers to public health would meet the need. Those of our readers located in sparsely settled districts in the state who know from personal experience what the needs are might submit their ideas for the information of their urban confreres. We would welcome their communications.

According to the revised bill, responsibility in carrying out the provisions of the bill are placed in the hands of the Surgeon General of the U. S. Public Health Service and the Federal Hospital Council, the latter to be more than advisory and to share responsibility in determining the number and general manner of distribution of hospitals to be constructed under the state plans. In the actual determination of local needs for federal assistance in hospital construction, great care will be required to avoid gross extravagance in the form of unnecessary hospital construction. A council located in Washington would be at a handicap in determining local needs. Even state supervision, while in a better position to evaluate local needs, would be subject to local pressure groups which could lead to useless hospital construction.



*they cost so little  
and do so much  
have you paid  
for yours?*

\*Editorial: The Hill Burton Hospital Construction Bill, J.A.M.A., 129:804, (Nov. 17) 1945.

# MEDICAL ECONOMICS

Edited by the Committee on Medical Economics  
of the  
Minnesota State Medical Association  
George Earl, M.D., Chairman

## NORTH CENTRAL STATES DISCUSS MEDICAL ECONOMIC PROBLEMS

Discussions at the North Central Medical Conference which was held in Saint Paul on November 11, clearly demonstrated that physicians in this area are much occupied with the medical economic problems facing organized medicine today and that words are being converted into action to meet these problems.

Long-range planning for adequate hospital facilities, adequate medical service in rural areas, educational and establishment opportunities for medical officers, prepaid medical service plans and effects of pending national legislation all ran the gamut of thorough perusal by the speakers and general discussions interspersed throughout the morning and afternoon sessions.

### Washington Office Shows Growing Influence

The delegates heard a firsthand report from Dr. Joseph S. Lawrence of the work being done by the Washington Office of the Council on Medical Service and Public Relations. Dr. Lawrence told of the growing interest in this office in Washington as evidenced by increased requests for consultation and information by both congressmen and officials of government bureaus. The most effective way for physicians not only to temper but enlighten congressional thinking on medical and health issues, Dr. Lawrence asserted, is to maintain close contact with them.

### Farm Leaders Offer Suggestions

Mr. J. S. Jones, Executive Secretary of the Minnesota Farm Bureau Federation, who has long been an ardent advocate of improved medical practices and facilities to better the general health of rural people, assured the delegates of the co-operative attitude that farm groups are evincing toward the medical profession. As a representative of two national committees on rural

medical care, he outlined the vast amount of research that is being undertaken to work out a solution for the inequalities that prevail in the standards of medical service rendered in many communities. Many rural leaders are tackling the problem in their home states by gathering data through their local county units to chart the course toward which specific improvement should be aimed, he said.

Rural people, according to Mr. Jones, want no trafficking with the Wagner-Murray brand of legislation. On the other hand, voluntary prepaid medical service plans are very much in the scheme of their thinking and they are looking to the medical profession to effect such a program on a national basis with the co-operation of farm and other lay groups.

The following seven proposals, Mr. Jones stated, had been presented and fully approved at a joint meeting held in Chicago in July of the Rural Medical Service Committee of the American Farm Bureau Federation and representatives of the American Medical Association.

1. That the American Medical Association endeavor to have state medical associations cultivate better working relationships with the state farm bureaus.
2. That all committees, national, state or community, selected or appointed concerning state health activities, have qualified farmer representatives included.
3. Work with medical profession in combating socialized medicine by promoting an aggressive, constructive program.
4. Determine the need on factual basis, after thorough consideration and research, of the need for hospital and medical services with particular reference to rural areas.
5. That the American Farm Bureau Federa-

tion and the state federations be leaders in working out plans for wise, effective use of public funds for improvement of public health with emphasis on local participation and local control.

6. That some plan be worked out for providing scholarships or loan funds for worthy rural youth to make it possible for them to study medicine with or without agreement to return to the country for practice. Interstate collaboration in medical education of students from states in which there is no medical school.

7. The development of prepaid medical and hospital care on a sound actuarial basis without subsidy is urged, as one of the problems in medical care for rural people is payment.

#### **National Voluntary Insurance Plan Proposed**

Conference members were interested, also, in remarks by Dr. A. W. Adson of Rochester, Minnesota, representing the Council on Medical Service and Public Relations. Dr. Adson told of the conviction held by physicians from 35 states, who attended a public relations conference of the Council in Chicago October 19 and 20, that there was definite need for some national voluntary medical service plan to become operative in all the states. This conviction has grown from the realization that with plans now operative in some twenty-one states, subscribers to these plans, since their inception in 1917, still number only six per cent of the total population of the country. To forestall and eliminate the dangers of federal control of medical practice, immediate efforts must be made to have a larger proportion of the population insured under prepayment plans, and this, in the opinion held in many quarters, can be accomplished only through an over-all national plan into which the various state plans can be integrated.

For the purpose of forming the nucleus for development of such a program on a national basis, Dr. Adson told the confreres of another meeting that will be called just prior to the House of Delegates' meeting on December 3 at which time specific resolutions will be presented.

#### **"People Want Health Insurance"**

Significant remarks, also, were made by Mr. Jay C. Ketchum, Executive Vice President of Michigan Medical Service. To quote Mr. Ketchum briefly:

"People have not thought of doctors as being particularly interested in medical economics," Mr. Ketchum said. "Almost automatically they look to Washington, rather than the doctor, for balm for their economic woes. A fact that politicians have carefully avoided mentioning is that people do not know it is possible to provide a health care program under anything other than government auspices."

"True enough, the people want health insurance. They are still thinking of it, however, as something that only government can provide. They have yet to learn that doctors can provide a 'health insurance' which government can never match."

Pointing to the successful operation of Michigan's Medical Service Plan, which has enrolled one out of every six persons in the state in a matter of five years, Mr. Ketchum said in conclusion: "A going medical service plan is a public demonstration of what the medical profession can do in this respect. It is action rather than words, and it is mighty convincing action. It is, in other words, perhaps one of the best public relations programs which the medical profession of any area could possibly devise."

#### **WISCONSIN AND IOWA LAUNCH STATE MEDICAL CARE PLANS**

During the past year, prepaid medical service plans have been launched in two of the North Central Conference states, Iowa and Wisconsin.

The newly announced Wisconsin Plan differs from that of its neighboring state Michigan in that it will be sold through a number of insurance companies on an identical basis instead of through the Blue Cross as is the case in Michigan.

While all insurance companies licensed to write health and accident coverage in Wisconsin are eligible to participate in the program, thus far eight companies have definitely committed themselves to participation under the terms of the policy, which must be used without modification, drafted by the Wisconsin State Medical Society.

Complete surgical coverage to employees, with dependents, having an income of less than \$2,600 a year and to single employees, having an income of less than \$2,080 a year, will be granted. For those having higher incomes the same benefits will apply although the physicians do not guarantee that such payments constitute payment in full.

Individuals and their families can purchase this protection through group insurance for groups of ten or more, franchise insurance for groups of three or more, or through individual policies.

The basic group rates for the insurance covered

by the plan will be \$1 per month for an individual; \$3.90 for man and wife; and \$4.75 for full family coverage, as determined by the group insured. It is anticipated that the plan will be put into effect shortly after the first of the year.

Iowa Medical Service, organized in July, 1945, is now in the process of enrolling subscribers. This differs from the Wisconsin plan in that it offers medical as well as surgical and obstetrical service in the hospital wth the medical servce limited to twenty-one days.

### **VA MEDICAL STAFF TO AIM AT SPECIALIZATION**

General Omar N. Bradley, Veterans' Administrator, discussed in Washington recently with medical authorities a tentative proposal to institute the highest type of specialized training for key members of the medical staff of the Veterans' Administration facilities. The proposal grew out of discussions between Dr. L. G. Rountree, Chairman of the American Legion's rehabilitation committee, and authorities of the University of Minnesota, the Graduate School of Medicine, the Mayo Clinic and Mayo Foundation based on a recommendation originally made by the Minnesota department of the Legion.

These officials, Dr. Rountree reported to General Bradley, expressed a willingness to co-operate in a plan whereby Veterans' Administration physicians and surgeons might receive opportunity to take postgraduate work in special or advanced training. The possibility also was discussed of working into the plan some arrangement for short, intensive special courses of training.

While the program is tentative until it is further explored by General Bradley and the Veterans' Administration, it is believed to be the first concrete suggestion for introducing specialization into the career medical service of the Veterans' Administration. If it is successful, it can be adapted to virtually every state with a postgraduate medical school.

### **RECONVERSION OF 9-9-9 PROGRAM**

A directive recently issued by the Procurement and Assignment Service outlines the method whereby hospitals are to begin immediately to supply their resident quotas from the ranks of medical officers who have been on active duty.

Commissioned officers serving as residents at present are to be called to active duty as rapidly as possible, in no case later than April 1, 1946, except in a few rare instances where it is proven that a hospital, after exhausting every effort, was unable to secure a veteran.

Hospitals are directed to begin at once to appoint veterans to every staff position so that as soon as they have been adequately trained to replace commissioned officer residents, the latter can be called to active duty at once without regard to whether they have completed the full term of their present deferment.

It is pointed out by PAS that for the present, at least, veterans will not count in hospital quotas so it will be of great advantage to hospitals to accept veterans as replacements for the officers who do count in quotas. By instituting the program promptly, hospitals will also be in the advantageous position of having residents who are orientated to their positions by the time they will be practically the sole source of resident supply for civilian hospitals.

In a case where a hospital desires the services of an officer on active duty in the army to replace a deferred commissioned resident, the Surgeon General of the Army will give prompt and favorable consideration to this request provided the officer has been on active duty for two years or more, is stationed within continental United States and has indicated that he will accept the appointment. This replacement possibility does not extend to officers on duty with the navy.

Commissioned officers completing hospital services between January 1 and July 1, 1946 (excluding those officers whose present term expires April 1, 1946) will be called to active duty at the date of the termination of these services unless they have previously been replaced by veterans and with a few rare exceptions where special requests are made and granted after careful review by the Procurement and Assignment Service and the Surgeon General of the Army.

For those commissioned officers whose present term terminates on April 1, 1946, the reconversion from the 9-9-9 program to a peacetime twelve-month service will be conducted in accordance with the following plan:

A. Each commissioned officer who is an intern terminating his nine months of internship on April 1, 1946 will continue in his present internship until July 1, 1946, with a few exceptions.

B. Each commissioned officer who is a junior resident terminating his junior residency on April 1 (if he has not already been replaced by a veteran prior to April 1) will be called to active duty on April 1 except in rare cases where an extension may be granted to July 1, 1946.

C. Each commissioned officer who is a senior resident and who is completing his twenty-seven months of service in a hospital following graduation will be called to active duty on or about April 1, 1946, if not replaced prior to that date by a veteran.

D. Senior students who graduate on or about April 1, 1946, are to be accepted for internship on that date. This new group of interns will be allowed to serve internships until July 1, 1947.

The directive emphasizes the necessity of re-converting from the 9-9-9 Program as rapidly as possible and returning to the July to July twelve-month internship this coming year.

To insure adequate distribution of the available supply of veterans, hospitals are urged not to fill their house staffs out of proportion to their present quotas, but to concentrate first on replacements.

## MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

**Julian F. Dubois, M.D., Secretary**

### Itinerant Health Lecturer Discontinues Activities After Warning From Ramsey County Attorney

*Re: Bradford Dorr, also known as Bryan Ripley Dorr*

On November 5, 1945, Bradford Dorr, sixty-four years of age, discontinued his health course activities and checked out of the Saint Paul Hotel, Saint Paul, Minnesota, after having been warned, on November 2, 1945, by Mr. James F. Lynch, County Attorney of Ramsey County, Minnesota, that if he continued his activities he would be prosecuted for an alleged violation of the Minnesota Basic Science Law.

Dorr, also known as Bryan Ripley Dorr, had sent out hundreds of letters soliciting individuals in Saint Paul to take a course at \$100 per person. In one of Dorr's circulars he stated that he was able to "arrest certain heart, circulatory, kidney, liver, stomach and intestinal diseases." As an introduction to the letter Dorr stated that he was born in Saint Paul and that his father Russell R. Dorr was the founder and one of the presidents of a well-known Saint Paul insurance company. He also stated that his mother had been a president of the Shubert Club and the founder and national president of a musical organization.

When Dorr's activities became known to the Minnesota State Board of Medical Examiners an investigation was immediately commenced and it was learned that Dorr had previously been at the Hotel Schroeder, Milwaukee, Wisconsin, and before that had operated in Chicago, Pittsburgh, New York City and other places. Dorr

admitted at the conference in the County Attorney's office where Dorr was represented by legal counsel, that he employed diet and exercise in his course. He also admitted that he had given a statement under date of May 26, 1943, to the Better Business Bureau of New York City containing the following:

"My services consist in improving physical condition through exercise, diet, and vitamins, and also, subject to the prescription and supervision of physicians, the relief of certain symptoms of rheumatism, sciatica, arthritis, lumbago, gout, bursitis, neuritis and neuralgia through therapy, and in particular, short wave diathermy, sinusoidal, faradic and galvanic currents, ultraviolet and infrared rays, vapor cabinet baths, and colonic irrigations."

Dorr also admitted that he had no license to practice any form of healing in the State of Minnesota, nor anywhere else. According to Dorr he has not lived in Saint Paul for many years. Dorr represented himself as, holding an A.B. degree, a member of Phi Beta Kappa, a graduate of Williams in 1902, and to have attended the Harvard University Graduate School of Business Administration. He is an exponent of the so-called Hollyouth Method which he claims to be "the only short-cut to the Fountain of Youth." According to the records at Harvard, Bradford Dorr was a part-time special student in the academic year 1926-1927 being enrolled in the course in Accounting Principles, Business Statistics and Finance. During the academic year 1927-1928 Bradford Dorr enrolled in the same school in the course in Corporation Finance. It is the claim of the Minnesota State Board of Medical Examiners and the County Attorney of Ramsey County, that Dorr's activities are clearly beyond the law of the State of Minnesota. The Supreme Court of Minnesota has ruled that:

"Advising the subscriber for a fee as to certain improved habits of diet, exercise, or living, although not accompanied by any medical prescription or treatment, is a violation of Section 5717 (Medical Practice Act)."

### Minneapolis Couple Convicted of Criminal Abortion

*Re: State of Minnesota vs. James Lloyd Beckman  
Re: State of Minnesota vs. Marilyn DeVerrel Beckman*

On November 7, 1945, James Lloyd Beckman, thirty-two years of age, 3425 Portland Avenue, Minneapolis, entered a plea of guilty in the District Court of Hennepin County, to an information charging him with the crime of abortion. Beckman, who has three previous convictions for forgery in the second degree, failing to keep his local draft board advised as to his whereabouts and failing to report for induction under the Selective Service Act, was sentenced by the Hon. Frank E. Reed, Judge of the District Court, to a term of three years at hard labor in the State Prison at Stillwater. Beckman holds no license to practice any form of healing in Minnesota, and gave his occupation to the Court as a teacher of ice skating and a commercial artist.

On November 19, Beckman's wife, Marilyn DeVerrel Beckman, thirty-five years of age, also entered a plea of guilty in the District Court of Hennepin County, to an information charging her with the crime of abortion. Mrs. Beckman was sentenced by Judge Reed to a term of not to exceed four years in the Woman's Reformatory at Shakopee, the Court providing, however, that the first year of Mrs. Beckman's sentence shall be served in the Minneapolis Woman's Detention Home and that Mrs. Beckman shall then be placed on probation for a period of three years.

Following a joint investigation by the Minnesota State Board of Medical Examiners and the Minneapolis Police Department, evidence was obtained indicating that Beckman and his wife were engaged in

doing numerous criminal abortions for which they were being paid as high as \$300 an abortion. The evidence also disclosed that Beckman and his wife had obtained \$1,050 in a period of twenty-nine days prior to their arrest, for doing 4 criminal abortions. Prior to being sentenced, Mrs. Beckman admitted under oath in Court that she had been engaged in doing criminal abortions for "several years." Mrs. Beckman stated that she married her present husband on August 20, 1945, and prior to that time was married to Frank J. Brady, who has a long criminal record in Minnesota for grand larceny, manslaughter and practicing healing without a Basic Science Certificate. Mrs. Beckman also stated during the investigation that she studied massage for three months in 1940 at the Chicago College of Swedish Massage. She claims that she paid \$100 for the course and that she received a diploma in massage and physiotherapy. She stated that she also attended the Minnesota Chiropractic College in Minneapolis for about eighteen months commencing in 1941, and that she paid \$20.00 per month for the course but never finished it. Mrs. Beckman stated that she was born in Vancouver, British Columbia, of American parents. She had no license to practice any form of healing in Minnesota nor anywhere else.

#### Duluth Quack Pleads Guilty at Minneapolis

*Re: State of Minnesota vs. "Dr." Alfred Peterson*

On November 26, 1945, Alfred Peterson, fifty-five years of age, 3718 West 4th St., Duluth, Minnesota, entered a plea of guilty in the District Court of Hennepin County to an information charging him with the crime of practicing healing without a basic science certificate. Peterson was arrested at the Nicollet Hotel, Minneapolis, on November 20, 1945, following an investigation by the Minnesota State Board of Medical Examiners and the Minneapolis Police Department. The investigation disclosed that Peterson, who claims to have studied chiropractic but holds no license to practice any form of healing in Minnesota, was making regular trips to Virginia, Hibbing, Grand Rapids, Brainerd, St. Cloud, Mora, Cambridge and Minneapolis. Peterson would interview patients at a hotel in each of the cities visited. In his literature he claimed to have

"discovered a cure for heart trouble—gall stones—ulcers—eczema—theumatism—sinus, and that dreaded disease C-A-N-C-E-R."

In his literature Peterson also stated:

"I will give \$1,000.00 to any Medical Association, any cancer research institution, or any one if they can prove that these testimonials are not true."

On one of his recent trips to Mora, Minnesota, Peterson made the mistake of furnishing the same medication to seven patients, with seven different ailments. One of the patients stated that she paid Peterson \$6.00 and her suspicions were aroused because the other patients received the same medication, notwithstanding their different ailments. It was then learned that Peterson would be at the Nicollet Hotel on November 20, to receive patients. He was greeted by Inspector Bernath of the Minneapolis Police Department who placed him under arrest and seized a suitcase full of medicinal preparations. Peterson at first claimed that he was a Divine healer but quickly abandoned that pretext when he was asked to explain the presence of the suitcase full of medicine. Peterson claims to have a chiropractic license in Tennessee.

Following a statement of the facts to the Court, Judge Frank E. Reed sentenced Peterson to a term of one year in the Minneapolis Workhouse and stayed the sentence for one year on condition that Peterson surrender his medicines to be destroyed by the State and

that he refrain from practicing healing in any manner anywhere in the State of Minnesota. Peterson agreed to this in open Court. Peterson was represented by Mr. Marshall S. Snyder, attorney at law, Minneapolis, who stated to the Court that he had advised Peterson that he was clearly violating the medical laws of Minnesota. The Minnesota State Board of Medical Examiners desires to point out that the conviction of Peterson marks the successful prosecution of ten persons in Minneapolis since July 1, 1945. The cases involved practicing healing without a basic science certificate, fraudulent advertising, and criminal abortion. These results could not have been achieved had it not been for the splendid co-operation of the Minneapolis Police Department and the Hennepin County Attorney's office, under Chief of Police Ed. Ryan, Inspector of Detectives, Eugene Bernath, Michael J. Dillon, County Attorney, and Otto Morck, First Assistant County Attorney, respectively.

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#### Minneapolis Woman Barber Pleads Guilty to Violating Basic Science Law

*Re: State of Minnesota vs. Anna Christina (Olson) Steele*

On October 29, 1945, Mrs. Anna Christina (Olson) Steele, fifty-one years of age, residing at 2705 Colfax Ave. So., Minneapolis, entered a plea of guilty in the District Court of Hennepin County, to an information charging her with the crime of practicing healing without a Basic Science Certificate. After a statement of the facts to the Court, the defendant was sentenced by the Hon. Edward A. Montgomery, Judge of the District Court, to pay a fine of \$50.00 or to serve thirty days in the Minneapolis Workhouse. The defendant paid the fine.

Mrs. Steele, a licensed barber, was arrested on October 11, 1945, by police officers under the direction of Inspector Bernath of the Minneapolis Police Department, on the second floor at 126 So. 3rd St., where the defendant operated the Windsor Baths. The investigation by the police officers disclosed that the defendant had two rooms equipped for the giving of a so-called cabinet bath and massage. The defendant, also, had an infrared lamp and a mechanical massager. The police officers also found three partially filled bottles of whiskey in the massage parlor operated by the defendant. Mrs. Steele represented herself as a masseuse although she holds no license to practice any form of healing in Minnesota. A one-chair barber shop is operated in connection with the Windsor Baths but no sign on the outer door indicated that a barber shop was present at that address. Mrs. Steele denied any interest in the barber shop and the woman operating the barber shop, likewise, disclaimed any interest in the bath and massage parlor.

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#### PARAPLEGIC PATIENTS TO RETAIN ESSENTIAL EQUIPMENT

Permanently disabled patients, upon their discharge from Army hospitals, may retain any appliances then in their use, which are necessary for their comfort and safety, according to a recent War Department bulletin.

Issued especially for the benefit of paraplegic patients (those suffering paralysis of the lower half of the body on both sides) the bulletin specifies that hospital equipment which is classified as non-expendable may be issued upon the authority of the bulletin, and expendable equipment may be issued to these patients at the discretion of the commanding officer of the hospital. Some of the equipment listed includes adjustable hospital beds, Balkan frames, invalid chairs, and innerspring mattresses and covers. No reimbursement is required of the patient.

# Minneapolis Surgical Society

Stated Meeting held May 3, 1945

The President, Daniel MacDonald, M.D., in the Chair

## CARCINOMA OF THE ESOPHAGUS

THOMAS J. KINSELLA, M.D.  
Minneapolis, Minnesota

Perhaps this subject is of no great interest to many of you, but it is a field which is not well understood and certainly one which is inadequately treated at the present time.

Carcinoma of the esophagus constitutes 5 to 7 per cent of all carcinomata and causes about 40 per cent of all difficulty in swallowing. It is five times as common in men as in women and rarely is encountered under the age of forty. The majority of cases are seen in the fifth decade. It rarely occurs in association with inflammatory or other disease. It is almost unheard of in sword swallowers or in patients who over a long period of time have passed a large stomach tube at frequent intervals, so the factor of local mechanical trauma probably is not important. Approximately one-half of the tumors in males are found in the lower third or cardiac end of the esophagus while in women nearly one-half occur in the pharyngeal end.

Pathologically, contrary to the popular impression, these lesions are rather highly malignant, most of them grade three and four of Broder's classification and very few of grade one or two. Most of them are of the squamous cell type, although an adenocarcinoma may develop from islands of gastric mucosa in the lower third. The majority of the adenocarcinomas found in this region are really high gastric tumors which have extended upwards. The lymphatic supply about the esophagus is very rich, favoring early metastasis. High lesions metastasize to the nodes of the neck, those of the middle third to the nodes about the bronchi, while those of the lower portion frequently extend to the nodes along the lesser curvature of the stomach and into the liver. Mid-esophageal lesions may by direct extension involve the adjacent trachea or bronchus and produce a fistula.

Symptoms vary widely according to location and metastases. A common history is for a laborer in his fifties, an alcoholic with poor teeth, to have difficulty in swallowing a large poorly chewed bolus of food which sticks on the way down and is finally forced or worked through after some effort. Rendered a little cautious by this experience, he then chews his food more carefully and has no difficulty for a month or two or more, when the episode is repeated, this time with less provocation. Gradually the trouble with solid food becomes more frequent. He loses his appetite and weight as he eliminates one food after another from his diet. Eventually trouble with soft and even liquid food follows. This history of trouble with solids first and later with liquids

is characteristic of increasing mechanical obstruction such as carcinoma produces in contradistinction to the so-called cardiospasm in which trouble with liquids occurs first.

Because of its insidious onset, there is usually a delay of several months between the onset of symptoms and the first report to the physician for examination. Eventually complete obstruction occurs and no food or liquid can be taken. Pain is a late symptom from involvement of the pleura, vagal branches or from mediastinal infection. Involvement of the phrenic nerve may produce hiccup or diaphragmatic paralysis. Metastases in the mid-thoracic region may interrupt one of the recurrent nerves and produce voice changes. Hemorrhage in late lesions occurs not infrequently and may be fatal. Death usually results from starvation, cachexia or some intercurrent infection.

The history as outlined above is suggestive only, but without confirmation does not make the diagnosis. The finding of a hard node in the cervical region suggests malignancy with the esophagus as a possible source. The passage of a sound over a string will localize the obstruction and may by tactile sense suggest malignancy, but unless a piece of tissue suitable for biopsy adheres to the guide, it does not prove the diagnosis. X-ray studies of the esophagus with barium do localize the obstruction and may establish the diagnosis but are subject to certain errors, as carcinoma may present a smooth surface suggestive of benign stricture, while retained food or other foreign body may give an irregular appearance suggestive of carcinoma to a benign inflammatory stricture. Esophagoscopy with direct visualization of the tumor is of great value in ruling out foreign body and extrinsic pressure stenosis and permits direct biopsy of tissue to confirm the diagnosis of malignancy. The biopsy if positive absolutely establishes the diagnosis, but if negative does not rule out carcinoma as perhaps 25 per cent of biopsy specimens fail to show tumor even in positive cases because of inflammatory changes and other factors.

Carcinoma of the esophagus must be differentiated from cardiospasm, foreign body, inflammatory stricture, diverticulum, extrinsic compression of esophagus and perforating carcinoma of the bronchus. The long history of trouble, the age group, the difficulty with liquids first, the marked esophageal dilatation together with the findings on the passage of sounds and the esophagoscope serve to differentiate the so-called cardiospasm. The presence of food or foreign material, or actual ulceration in a large dilated esophagus, may confuse the diagnosis. Care must be exercised at times in cases of diverticulum (not the pharyngeal type) to be certain that it does not represent merely a dilatation above an obstructing carcinoma. The history is very important in cases

of foreign body and inflammatory stricture or stenosis. Bronchiogenic carcinoma may at times invade and perforate the esophagus causing obstruction and dysphagia, but the reverse of this situation occurs far more frequently.

Anorexia, slow starvation and cachexia are constant findings as the disease progresses. Ulceration and perforation of the trachea or adjacent bronchus is a not infrequent complication of carcinoma of the mid-esophagus producing cough and secondary pulmonary changes from aspiration of food. Ulceration and hemorrhage even exsanguinating in degree, is not a rare late event. Perforation and mediastinal infection may be spontaneous or may follow manipulation in the presence of carcinoma of the esophagus. Direct invasion of any adjacent structure as aorta, nerve trunks, pleura or pericardium may occur.

### Treatment

Treatment may be palliative or curative. In a palliative way several things besides mere symptomatic treatment may be done to make life a little more bearable for these patients. Control of diet, addition of fluids, vitamins, et cetera, may add to the individual's comfort. Dilatation of the obstructing tumor by means of a bougie over a string to 30 to 45 French at intervals to keep a food passage open will help about 90 per cent of patients and permit them to take sufficient food to maintain nutrition fairly well until late in the disease when metastases are ending the picture. Dilatation without a string as a guide should never be attempted because of the danger of perforation. Any dilatation carries with it about 2 per cent mortality from traumatic perforation and secondary mediastinitis.

The use of an indwelling nasal feeding tube has little if anything to add to dilatation. The Souttar indwelling esophageal tube has not proven appreciably better than dilatation and has not prevented progressive obstruction. X-ray and radium implantation have at times relieved and temporarily slowed up the obstructing lesion. Gastrostomy as a palliative measure may aid in maintaining nutrition but probably does not prolong life. If performed early the risk is not great but if attempted late carries with it a mortality of from 10 to 50 per cent.

The possibilities of surgical excision of esophageal carcinoma has long intrigued the surgeon, but for many years technical and anesthetic difficulties prevented any great progress in this field. It is only since marked advances have been made in anesthesia and thoracic surgery that attention has again been directed toward this lesion. The first successful treatment of esophageal carcinoma was apparently that of F. Torek who in 1913 excised the entire esophagus for a carcinoma of the middle third, closing the cardia and bringing the segment above the tumor out through a cervical incision, implanting it under the skin of the upper thorax. This was then connected by means of a rubber tube with a gastrostomy stoma. This patient survived for fourteen years and then died of another cause. Later surgeons have substituted Gilles skin tubes, loops of jejunum and tubes fashioned from the stomach for the rubber tube with varying success.

Lesions of the upper third have been resected with the larynx, creating a permanent tracheotomy and fashioning a skin tube to connect the pharynx with the lower esophagus. A more fertile field for surgical attack is the lesion in the lower third or half of the esophagus where resection and direct anastomosis between the proximal segment and the stomach can be made after splitting the diaphragm and mobilizing the stomach so it may be drawn up into the left pleural cavity. A few surgeons have extended the use of this procedure to even higher lesions, making the anastomosis as high as the arch of the aorta. An excellent report of surgery of this type and of trans-thoracic resection of high gastric carcinoma by Sweet may be found in the March 1945 number of *Annals of Surgery*.

The cases which I wish to discuss this evening were all lesions of the lower third of the esophagus. Six of these, after careful studies, were considered as being early and localized enough to justify exploration. The first of these patients was a man operated upon in 1940 at the Minneapolis General Hospital. He had reported to the dispensary several months previously with a short history of dysphagia. X-ray studies of the esophagus were reported as negative. Esophagoscopy was not carried out. He was requested to return for restudy in four weeks, but failed to report for several months when he was unable to swallow any solid food. X-ray studies demonstrated a short obstruction in the lower third of the esophagus which was proven on biopsy to be a squamous cell carcinoma. A left posterior transthoracic exploration revealed a short non-adherent obstructing mass about 6 centimeters above the diaphragm. There were no enlarged nodes palpable within the chest, and as the local tumor was easily mobilized, it seemed that the condition was favorable for resection until the diaphragm was split and a mass of enlarged nodes found near the pylorus. The chest was closed without attempting resection, and the esophagus later kept open by dilatation over a string. The patient died three months later with extensive lymph node and liver metastases and an unsuspected carcinoma of the kidney. Three other patients have been explored for apparently localized lesions but were found inoperable because of metastases.

Two others have been explored and found resectable. The first of these, operated in January, 1944, was a man of sixty-three, troubled for several years by hypertension, pernicious anemia, and achlorhydria who presented himself with difficulty in swallowing of four months duration. Examination revealed a short squamous cell carcinoma of the lower third of the esophagus. This was exposed through a left posterior transthoracic incision, the diaphragm split, and the chest and abdomen explored for metastases with negative results. The stomach was mobilized after ligation of the left gastric artery and brought into the left pleural cavity. The tumor was resected, a direct end to side anastomosis made and the chest closed after inserting catheters for continuous intrathoracic suction. Convalescence was uneventful and the patient was again able to swallow without difficulty. He has remained without dysphagia since although he is underweight and anemic and has been returned to the

(Continued on Page 1042)

# Minnesota Academy of Medicine

Meeting of October 10, 1945

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, October 10, 1945. Dinner was served at 7 o'clock and the meeting was called to order at 8:10 by the president, Dr. A. G. Schulze.

There were forty-five members and nine guests present. Minutes of the May meeting were read and approved. Dr. Walter Camp read the following Memorial to Dr. Arthur Edward Smith.

## ARTHUR EDWARD SMITH 1879-1945

Dr. Arthur Edward Smith died at Northwestern Hospital on February 16, 1945, at the age of sixty-five. He was born March 1, 1879, at Milwaukee, Wisconsin, and was the son of Rundell and Grace Bemis Smith, of Poughkeepsie, New York.

His preparatory education was at Markham Academy in Wisconsin. He graduated from the Medical School of the University of Minnesota in 1905 and served a two-year internship at Northwestern Hospital, Minneapolis, Minnesota. He became interested in the specialty of ophthalmology and otolaryngology and studied in the Kruckmann Clinic in Berlin and the Dimmer Clinic in Vienna in 1912 and 1913. He attended the University of Vienna Short Courses in his specialty in 1929 and 1933, receiving his graduate certificate at that time.

He was married to Florence Anderson, of Minneapolis, in 1915, who survives him.

Arthur Edward was very much interested in music and was an excellent pianist. His music was not only a pleasure to himself, but was greatly appreciated by his many friends.

He was a 32nd degree Mason, a member of the Sigma Alpha Epsilon Fraternity, the Minneapolis, Minikahda and Automobile Clubs.

Dr. Smith was chief oculist of the Soo Line Railroad, and a member of the American Association of Railroad Surgeons.

He was a Fellow of the American College of Surgeons, and a member of the American Medical Association, Hennepin County Medical Society, the Minnesota Academy of Medicine, and the American and Minnesota Academies of Ophthalmology and Otolaryngology.

Dr. Smith was the author of numerous articles on ophthalmology and translated several German monographs on ophthalmology.

He had a pleasing personality and a very subtle sense of humor and will be greatly missed by all his colleagues and friends.

A motion was carried that this Memorial be spread on the Minutes of the Academy and a copy sent to Mrs. Smith.

The President announced that there would be an election of new members at the November meeting.

The scientific program followed.

Dr. Chatterton, of Saint Paul, gave the following case report, and showed several x-ray films of the case.

## OSTEOMYELITIS OF THE LUMBAR VERTEBRAE

CARL C. CHATTERTON, M.D.  
Saint Paul, Minnesota

Mr. W. B., Lakefield, Minnesota, consulted me December 1, 1944.

*Present Complaint:* Backache, severe, aggravated on any motion. It never entirely disappears. He is most comfortable lying down.

*History:* Late in July while cultivating corn, suddenly without cause he was seized with severe pain in the back. He had to quit work, went to bed, and has not worked since. He felt hot, perspired freely, and was sick at his stomach at the time. The backache has continued in spite of any treatment, and rest in bed is his only relief. Of late, he has been having a fever and the pain is getting worse.

*Personal History:* No complaint of the various systems. No operations. He suffered from melancholia years ago and was in the hospital for a time. He is married and his wife is well. He has been a farmer all his life. He does not drink milk, but uses it on cereals and in coffee. His cows have not been tested for Bangs' disease.

*Examination:* The patient, a man, thirty-nine years old, muscular, had an average weight of about 250 pounds. He was definitely suffering. Perspiration stood out on his forehead. He was pale and was sick. On examination, his neck and upper extremities seemed normal. Eyes were normal. Heart tones were normal. He had a pendulous abdomen, not tender. His spine was slightly flexed. There was marked spasm in the sacro-spinal muscles, both sides, and marked limitation of motion in the lumbar spine. Pressure tenderness was present on the left side from ilium to ribs. The legs were blue and cold. Motion was near normal. Patellar reflexes were normal. Achilles jerk was not obtainable on either side. Temperature was 101.5°. Because of his severe pain and condition, he was advised to go to the hospital.

At the hospital his temperature rose to 102°, and continued to rise daily as high as 104.5°. Urine showed a trace of albumin. The hemoglobin was 80 per cent,

leukocyte count 16,700, sedimentation rate 90 mm. in one hour. Blood culture was negative. The Kline and Kolmer were negative. Agglutination tests, typhosus, melitensis abortis, paratyphosus and bacillus tularensis were all negative. Blood culture was negative.

**X-ray:** X-ray picture showed destructive processes involving the lower surface of the first lumbar vertebra with the disc destroyed and with involvement of the second lumbar; slight suggestion of a left psoas abscess. The radiologist suggested neoplasm, tuberculosis, osteomyelitis, or brucellosis.

Up to this time the treatment had been rest, Buck's extension, and sedatives without relief.

With all tests negative, with the history of acute onset, we feel neoplasm and tuberculosis could be eliminated. The leukocyte count and sedimentation rate with the patient's temperature of 104° and getting definitely worse, we felt pointed to an osteomyelitis. At that time 100,000 units of penicillin were given intravenously and penicillin was continued, 100,000 unit doses daily for the next twelve days. The third day after this treatment, the temperature was normal and continued normal. On the eighth day after admission to the hospital, a plaster of Paris body cast was applied which he wore until January, at which time a Taylor brace was applied which he wore for two months more.

Early in March, 1945, this man was so recovered that he was able to walk about with little pain and he wears his brace only when doing hard physical labor. He has been doing such work as a farmer does all summer, wearing a brace only when he does heavy work.

### Discussion

**DR. E. A. REGNIER, Minneapolis:** I would like to ask Dr. Chatterton if a plaster was applied with the spine in hyperextension. This is a rare disease and I appreciated hearing this report and want to commend Dr. Chatterton on the good result obtained.

**DR. A. R. COLVIN, Saint Paul:** Dr. Chatterton's case is a very remarkable one; and, in conjunction with the case I wish to report in discussion, furnishes again evidence of the manifold nature of osteomyelitis and of the marked variability of the reaction of bone or, for that matter, of any tissue to infection. Osteomyelitis, because of the possibility of radiographic observation, furnishes us with an opportunity to demonstrate the various grades of infection both in progression and in regression.

A young man, aged seventeen, was admitted to the Ancker Hospital on August 15, 1940, suffering from a painful shoulder joint. His temperature was 103°. A blood culture revealed staphylococcus aureus. He was given sulfathiazole. His temperature remained elevated for ten days and then fell to normal and remained so until his discharge from the hospital on September 18, 1940. In the interval between his discharge from the hospital and his second admission on November 21, 1940, he suffered from pain in the back of a vague and diffuse character, not bad enough to interfere with his activities, including basketball. The pain was exaggerated, however, occasionally by sudden movement. On November 18, 1940, it became suddenly very severe and constant and aggravated by movement of the spine in any direction. On November 20, 1940, he experienced a dull aching pain in the epigastrium, unaccompanied by any digestive disturbances, however. On November 21, 1940, he had some difficulty in standing upright

and was admitted to the hospital, this being two months after the first complaint of pain in the back.

He presented the appearance of extreme suffering and any movement of his trunk caused great pain. There was marked tenderness in the right costovertebral angle. (It may be noted here that he had been sent to the hospital by his family physician with a probable diagnosis of perinephritic abscess.) He had a temperature of 104°, leukocyte count 22,000. A blood culture revealed staphylococcus aureus. Sulfathiazole was given for five days. After four days, his temperature returned to normal and remained so thereafter. A radiograph shows an area of destruction about the size of a pea in the anterolateral aspect of the tenth dorsal vertebra. On December 7 (sixteen days after admission), he complained of numbness of his feet, and he had urinary incontinence. Thus, the first evidence of involvement of the nervous system was manifest three months after his first complaint of pain in the back. On December 10, 1940, there was complete loss of power of the lower extremities. Sensation was greatly impaired. Beginning December 20, there was a return of motor power, and by February 11, 1941, this was almost normal, with, however, marked spasticity. Improvement continued, and he was discharged October 1, 1941, with seemingly normal power in his lower extremities with, however, marked spasticity. He has been observed at frequent intervals since then. The spasticity has gradually diminished but is still present.

It is remarkable that, with such severe clinical and pathological manifestations in Dr. Chatterton's case, there was no disturbance of function of the spinal cord. And yet, in the case I am reporting in which there was so little bone involvement, paralysis did occur but disappeared in a short time. Interference with cord function could be due to epidural abscess, exudative process with granulation tissue or inflammatory edema. The early disappearance of the paralysis would suggest edema as the cause in the case reported.

That the diagnosis of osteomyelitis of the spine is not always easy is evidenced by the report of 102 cases from the Department of Surgery and Orthopedics of the State University of Iowa. (*Jour. of Bone & Joint Surgery*, April, 1936.) Confusion existed in nine cases of tuberculosis, two cases of appendicitis, four cases of arthritis of the spine, four cases of pneumonia with empyema, three cases of mediastinal malignancy, three cases of meningitis, one case of sacrolumbar strain, one case of sciatica, and one case of urethral obstruction.

Ramsey Hunt, in the *Medical Record*, April, 1904, says that the real nature of this disease, namely, osteomyelitis of the spine, is often overlooked because of the more manifest complications; in other words, the complication is diagnosed, but the underlying disease is not. The observation of Gowers in 1899, "that acute general external meningitis occurs as a primary disease and may run an intensely rapid course with profuse suppuration between the dura and the bones," must, according to Ramsey Hunt, be changed to say that primary idiopathic suppurative meningitis (epidural abscess) must be regarded rather as being secondary to osteomyelitis of the spine. The variety of conditions mistakenly diagnosed in the Iowa series, involving as it did tissues and organs of wide-spread location and variable character, would suggest the necessity of at least general surgical, orthopedic and neurological collaboration, and very frequently a wise internist might be able to clear the atmosphere.

Dr. Chatterton's case, with a remarkable recovery after the administration of penicillin, and the recovery of my case after the use of sulfathiazole, would seem to revolutionize the treatment. Nevertheless, epidural abscess should always be evacuated surgically, remembering, however, that suppurative and non-suppurative osteomyelitis may exist in the same individual at the same time; one requiring surgery, the other not.

**DR. THEODORE SWEETSER, Minneapolis:** I would like to mention something in this connection. Over ten years ago at General Hospital we operated on a patient diag-

nosed perinephritic abscess, and encountered pus just outside the posterior renal fascia. Following this suppuration upward, we encountered bare bone of a vertebra and called the lesion osteomyelitis of the eleventh dorsal vertebra. With drainage and prolonged rest on a Bradford frame, the patient recovered. It was before the days of the sulphonamides and penicillin.

DR. CHATTERTON, in closing: In answer to Dr. Regnier's question, a definite effort was made to hyperextend this man when plaster of Paris cast was applied to transfer the weight-bearing of his spine from the bodies to the posterior facets.

The difficult thing for me to decide was as to whether this man had a tuberculosis with a secondary infection or whether he had a true osteomyelitis. I do not believe it was tuberculosis because the x-ray pictures show early evidence of fusion without crushing down of the body of the vertebra, a change which would have taken years in the average tuberculous spine. I do not know as to the type of acute infection because the blood culture was negative, but penicillin I believe saved this man's life and was of great benefit to him when he had high temperature and was desperately ill.

## CYSTECTOMY FOR CARCINOMA OF THE BLADDER

THEODORE SWEETSER, M.D.  
Minneapolis, Minnesota

Dr. Theodore Sweetser, of Minneapolis, read his Inaugural Thesis on the above subject (See page 987). Lantern slides were shown.

### Discussion

DR. W. F. BRAASCH, Rochester: Dr. Sweetser deserves much credit for the excellent discussion of his subject and for the good postoperative results he has had. Cystectomy, after all is said and done, is a pretty formidable procedure and I am sure that anyone would rather hesitate to submit himself to such an operation unless it was mandatory. Nevertheless, cystectomy with transplantation of the ureters undoubtedly offers the best method of radical removal of vesical carcinoma. It is true that many tumors of the bladder of the papillary type can be removed by transurethral electrocoagulation, and the results have been good in a high percentage of cases. However, there is always danger of leaving seeds of tumor tissue in other areas of the bladder wall, which become nuclei for recurrence of the tumor. Cystectomy removes the tumor completely, providing there is no perivesical extension.

The operation itself carries with it less danger as the years go on. The operative mortality should not be more than 10 to 15 per cent. However, the postoperative results in these cases have not been very reassuring, since the majority of such patients are dead at the end of two or three years. Cystectomy in the past has been done largely in cases in which the tumor is extensive and of the infiltrating type, and, even though evidence of perivesical extension of the growth cannot be found at operation, the prognosis is not good.

Cystectomy has been employed in recent years in early and more favorable cases and, as a result, the postoperative record should be much better than in the past. As far as transplanting the ureters to the skin is concerned, this operation is usually objected to because of the post-operative difficulty of caring for the ureters. Dilated ureters usually can be transplanted into the sigmoid as successfully as undilated ureters. The technique of the operation has been greatly improved in recent years. Dr. Priestley, in a recent report, stated that in the last

twenty cases he transplanted both ureters at the same time and, two or three weeks later, performed a cystectomy, with coincident removal of the prostate and seminal vesicles. Dr. Ferris recently performed a cystectomy on a patient, with bilateral ureteral transplantation, as well as prostatectomy and vesicectomy, all in one operation. Three weeks later the patient walked over to the Clinic, apparently in good condition. With perfection of technique and with careful pre-operative and postoperative treatment, which is equally important, cystectomy has lost much of its formidable character and I am sure that it will be employed more often.

DR. C. D. CREEVY, University of Minnesota: I would like to congratulate Dr. Sweetser on the excellence of his presentation, and on the work that he has done in these patients. I have never been able to convince myself of the value of total cystectomy in infiltrating carcinoma of the bladder because of the great frequency of local recurrence. I believe that I am correct in stating that Dr. Nesbit at Ann Arbor and Dr. James Priestley at the Mayo Clinic, have abandoned the operation for infiltrating carcinoma for this same reason, and that they reserve it for recurring multiple papillomata or very low-grade tumors.

I have twice performed cutaneous ureterostomy for inoperable carcinoma of the bladder. One of the patients died postoperatively, and the other survived in misery.

I have done four uretero-intestinal transplants for carcinoma of the bladder. In one instance the operation was palliative; and, while the transplantation was a success, the patient had enough sloughing and bleeding so that it was without value as far as comfort was concerned. A second patient died of pneumonia three weeks after operation; and the third and fourth patients survived cystectomy, but both had local recurrences in about six months.

In a fifth case, done jointly by Dr. Meland and myself, the patient survived, but it was found that he had a chronic ulcerative cystitis with extreme contraction of the bladder but without any neoplasm.

Another factor which restrains me from doing these operations in carcinoma of the bladder is the fact that no patient is likely to be completely comfortable for any great length of time after transplantation of the ureter into the bowel, although I am well aware of the fact that one patient, at least, has survived for forty-five years after transplantation of the ureter into the bowel for exstrophy of the bladder.

Nevertheless, I am interested to see the results of others in this situation.

The meeting adjourned.

J. A. LEPAK, M.D., *Secretary*

## NINE KOREAN PHYSICIANS BEGIN YEAR OF TRAINING IN UNITED STATES

Nine physicians from Korea, recently welcomed to the United States by Major General Norman T. Kirk, The Surgeon General, and Brigadier General James S. Simmons, Chief of Preventive Medicine Service, have begun a year of study in the field of public health, sponsored by the International Health Institute of the Rockefeller Foundation.

Three of the physicians are attending Johns Hopkins University Medical School, three Harvard University Medical School, and three the University of Michigan Medical School.

The purpose of the year of training, General Kirk said, "is to lay the foundation for a self-sufficient medical service for the Korean nation. For more than thirty years the Japanese have dominated all medical and other scientific work in Korea as well as its national and local government affairs. No Korean has been allowed to serve in a position of responsibility in the nation or in his own community."



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## In Memoriam

### HORACE NEWHART

Dr. Horace Newhart, outstanding specialist in diseases of the eye, ear, nose and throat, and for years identified with public health activities in Minneapolis in preservation and conservation of hearing, passed away July 9, 1945, after a short illness.

Dr. Newhart was born in New Ulm, Minnesota, December 9, 1872. After attending local schools and Carleton College, he received his bachelor's degree at Dartmouth and his medical degree from the University of Michigan in 1898.

After a short time in practice near Albany, New York, he became established in general practice in Minneapolis in 1901. He then spent several years in Vienna in the study of eye, ear, nose and throat diseases, and then devoted himself to this specialty upon his return to Minneapolis.

Dr. Newhart has been on the faculty of the University of Minnesota Medical School since 1912 and was Director of the Division of Otolaryngology for several years preceding his retirement in 1941. His interest was particularly in otology, and for the past two decades he devoted much of his energy to the improvement of audiometers for testing hearing and the development of better hearing aids. For many years he was chairman of the committee of the American Academy of Ophthalmology and Otolaryngology on the conservation of hearing and was president of the Academy in 1925.

Dr. Newhart was a member of the Hennepin County Medical Society, the Minnesota State and American Medical Associations; the American Laryngological, Rhinological and Otolaryngological Society; the American Otolaryngological Society, of which he was president in 1939-40; the American College of Surgeons; the Minnesota Academy of Ophthalmology and Otolaryngology, and the Minnesota Academy of Medicine. He belonged to the Sigma Chi and Phi Rho Sigma fraternities and to the Lafayette, Minikahda and Campus Clubs.

Dr. Newhart is survived by his widow, Anne Hendrick Newhart; a son, Ellwood H. Newhart; a sister, Grace, and two grandchildren, Anne and Sally.

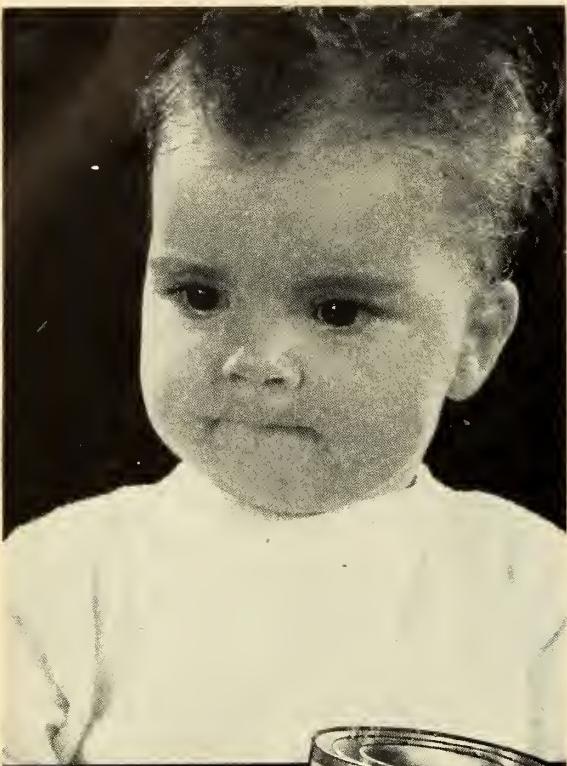
### CLIFFORD I. OLIVER

Dr. Clifford I. Oliver of Graceville, Minnesota, well known as a surgeon and State Senator from the forty-eighth district, died March 27, 1945, at the age of sixty-eight.

Dr. Oliver was born March 26, 1877, at Ames, Iowa. He attended local schools and took preliminary work at Cornell College. He graduated from the medical college of the University of Illinois in 1901.

Immediately following his marriage to Myrtle Gossard in June, 1901, Dr. Oliver went to Graceville. He was one of the charter members of the West Central Minnesota Medical Society. In 1904 he established a six-

(Continued on Page 1026)



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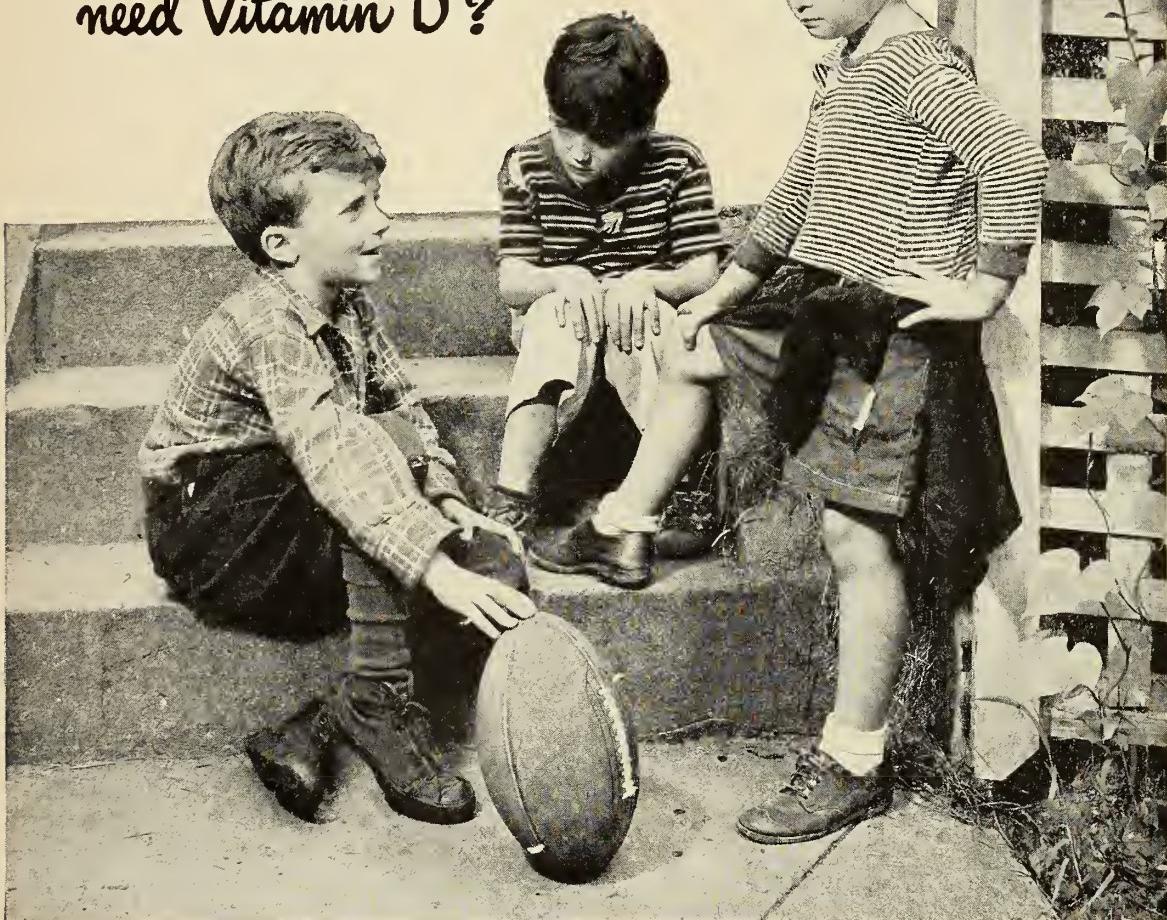


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## CLIFFORD I. OLIVER

(Continued from Page 1024)

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bed hospital at Graceville, and in 1914 built the West Central Minnesota Hospital unit with twenty beds, which was doubled in capacity in 1925.

In 1915 Dr. Oliver became a member of the American College of Surgeons. In 1917 he enlisted as Captain in the Medical Corps of the Army and received his discharge in December, 1918. After taking some post-graduate work at the Mayo Clinic in 1918-19 he resumed practice at Graceville.

In 1934 he was elected to the State Senate from the forty-eighth district and served until 1941 when he declined re-election on account of poor health. He retired from active practice in 1937, but on the outbreak of war resumed practice when younger members of the clinic joined the service. He was actively engaged in practice till his death.

Dr. Oliver was particularly interested in early Minnesota history and Indian life in this territory. He accumulated a large and interesting collection of Indian relics and antiques, and had an extensive library on the subject. He also took a great interest in conservation of wildlife. He was a charter member of the Graceville Golf Club founded in 1923 and was an enthusiastic player until poor health prevented. Hunting and fishing also offered him diversion.

Dr. Oliver was a member of the West Central County Medical Society, the Minnesota State and American Medical Associations. He was local surgeon for the Great Northern and the Chicago, Milwaukee, St. Paul and Pacific Railways.

He is survived by his widow, a son, Dr. Irwin L. Oliver, who has been associated with him in practice since 1930, a daughter, Mrs. S. Buttz of Alexandria, and six grandchildren.

## CARCINOMA OF THE BLADDER

(Continued from Page 992)

swers the challenge, and I do not believe that present-day radiation therapy is the answer.

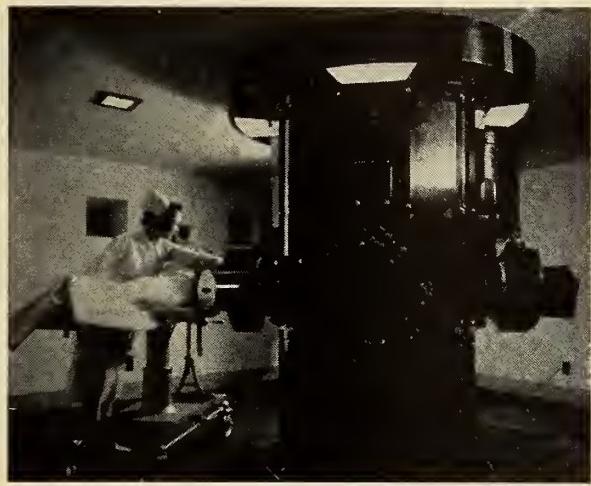
5. The fatal weakness in any attempt at surgical removal of the more malignant infiltrating growths lies in our inability to remove the regional lymph nodes which are the primary filters of the escaping malignant cells.

## Bibliography

1. Bugbee, H. G.: Surgery of genito-urinary malignant tumors. J.A.M.A., 112:298, (Jan. 28) 1939.
2. Conway, J. F., and Broders, A. C.: Submucous extension of squamous cell epithelioma of the urinary bladder. J. Urol. 47:461, (Apr.) 1942.
3. Geraghty, J. F.: Tumors of the bladder. In Cabot's Modern Urology—2nd Ed., 2:253, 1924.
4. Jewett, H. J.: A new method of ureteral transplantation for cancer of the bladder. J. Urol. 48:489, (Nov.) 1942.
5. Orr, L. M., Carson, R. B., and Novak, W. F.: Statistical study of present-day methods used in treatment of tumors of bladder. J. Urol. 42:778, (Nov.) 1939.
6. Priestly, J. T., and Strom, G. W.: Total cystectomy for carcinoma of the bladder. J. Urol. 50:210, (Aug.) 1943.

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## REPORTS and ANNOUNCEMENTS

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### MEDICAL BROADCAST FOR DECEMBER

The following radio schedule of talks on medical and dental subjects by William O'Brien, M.D., Director of Postgraduate Medical Education, University of Minnesota, is sponsored by the Minnesota State Medical Association, the Minnesota State Dental Association, the Minnesota Hospital Association and the University of Minnesota School of the Air.

1	11:30 A.M.	KUOM-KROC-KFAM	Medicine in the News
5	11:00 A.M.	KUOM	A Keen Sense of Hearing Makes for Alertness
6	5:15 P.M.	WCCO	Nature of Diabetes
8	11:30 A.M.	KUOM-KROC-KFAM	Medicine in the News
12	11:00 A.M.	KUOM	Suitable Clothes Help Us to Forget Ourselves
13	5:15 P.M.	WCCO	Management of Diabetes
15	11:30 A.M.	KUOM-KROC-KFAM	Medicine in the News
19	11:00 A.M.	KUOM	Foods Serve 3 Main Purposes
20	5:15 P.M.	WCCO	Contribution of Medicine
22	11:30 A.M.	KUOM-KROC-KFAM	Medicine in the News
24	4:45 P.M.	WCCO	Your Hospital in Peace Time
26	11:00 A.M.	KUOM	Arranged
27	5:15 P.M.	WCCO	Dental Progress
29	11:30 A.M.	KUOM-KROC-KFAM	Medicine in the News

### VAN METER PRIZE AWARD

The American Association for the Study of Goiter again offers the Van Meter Prize Award of three hundred dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the Association which will be held in Chicago, Illinois, in April or May, 1946, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English; and a typewritten double-spaced copy sent to the Corresponding Secretary, Dr. T. C. Davison, 207 Doctors Building, Atlanta 3, Georgia, not later than February 20, 1946.

A place will be reserved on the program of the annual meeting for presentation of the Prize Award Essay by the author if it is possible for him to attend. The essay will be published in the Annual Proceedings of the Association. This will not prevent its further publication, however, in any journal selected by the author.

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### CHICAGO MEDICAL SOCIETY CLINICAL CONFERENCE

The Chicago Medical Society Annual Clinical Conference will be held at the Palmer House, Chicago, March 5, 6, 7 and 8, 1946.

The program committee has invited outstanding members of the medical profession to present papers of gen-

(Continued on Page 1030)

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**CHICAGO MEDICAL SOCIETY**

(Continued from Page 1028)

eral interest to all the profession. The space in the Exhibition Hall has been completely allotted to a carefully selected group of Technical Exhibitors and the Committee on Scientific Exhibits is busy processing the large number of applications submitted for presentation at this meeting.

These plans assure the success of this, the first major general meeting in Chicago since the cessation of hostilities. It should prove intensely interesting to all physicians in and near Illinois.

**NORTHERN MINNESOTA MEDICAL ASSOCIATION**

The Northern Minnesota Medical Association held an all-day conference at Fergus Falls on November 3 and elected the following officers: president, Dr. George E. Sherwood, Kimball; vice president, Dr. Walter Scott Neff, Virginia; secretary-treasurer, Dr. Richard N. Jones, St. Cloud.

Special speakers included Dr. James T. Morrill, president of the University of Minnesota; Doctor William T. Peyton and Dr. Richard L. Varco, University Hospital, Minneapolis; Dr. H. L. Parker, formerly a professor at the University of Dublin; and Dr. Corrin Hodgson, of the Mayo Clinic.

Resolutions were adopted in appreciation of the excellent arrangements made by the Park Region District

and Otter Tail County Medical Societies for the meeting and complimentary luncheon at River Inn, and also for the evening banquet at which Dr. William L. Patterson, of the State Hospital, was host.

The next meeting will be held at Crookston.

**CLARENCE M. JACKSON LECTURESHIP**

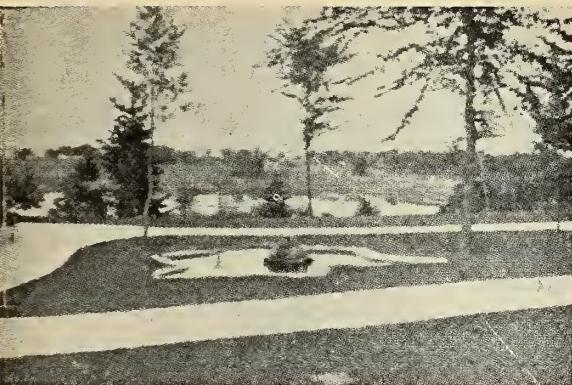
The Clarence M. Jackson lectureship will be given January 9, 1946, at 8:15 P. M., in the Amphitheatre of the Museum of Natural History at the University of Minnesota.

The speaker is Dr. T. Duckett Jones, Associate Professor of Medicine at Harvard Medical School and Director of the Good Samaritan (Rheumatic Fever) Hospital at Boston. His subject will be "Rheumatic Fever."

The lecture is sponsored by Minnesota-Xi Chapter of Phi Beta Pi Medical Fraternity and is open to anyone who cares to attend.

**WASHINGTON COUNTY**

Washington County physicians met in regular monthly session, November 13, at Stillwater. The evening was devoted to the interpretation of forty-nine chest films of positive Mantoux reactors among the students at Stillwater schools. The interpretations were done by Dr. E. K. Geer of Saint Paul. Among guests present were Miss Madden, school nurse, and the Lake View Memorial Hospital technicians.



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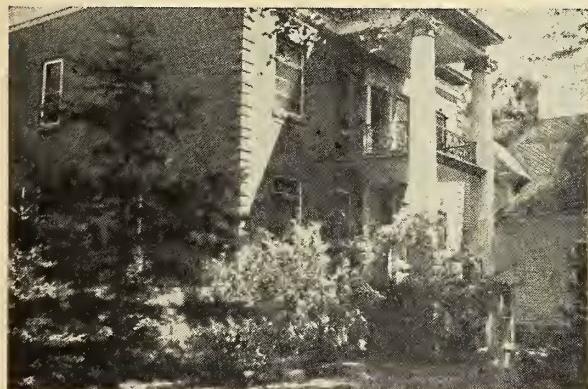
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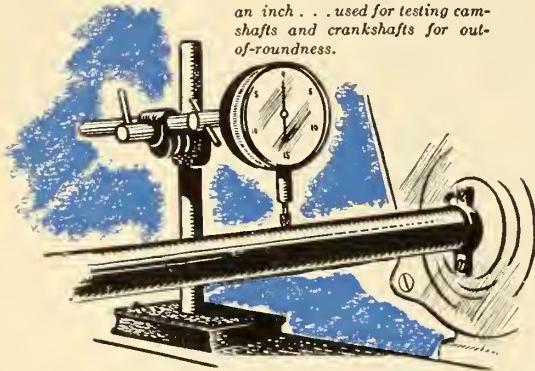
WEEK DAYS—8 to 7  
SUN. AND HOL.—10 TO 1

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## WOMAN'S AUXILIARY

MRS. EDWARD V. GOLTZ, President  
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MRS. JOHN K. BUTLER, Editor  
Carlton, Minnesota

### BLUE EARTH COUNTY

Several members of the Blue Earth County are conducting Open Health meetings at which they provide trained speakers from the State Department of Health.

They will also have talks on Home Nursing, Cancer, and Volunteer Nurses' Aide. Some of those active in this project are Mrs. A. F. Kemp, Mrs. A. J. Wentworth, Mrs. George Penn, Mrs. G. A. Dahl, and Mrs. Roy Andrews.

### EAST CENTRAL SOCIETY

The East Central Society recently met at the home of Mrs. E. W. Miller, Anoka, to make surgical dressings for the Minnesota Cancer Society. It was agreed to send a subscription to *Hygeia* to one school in each county of the East Central Society.

### HENNEPIN COUNTY

Mrs. Clyde Undine was chairman of the committee which assisted the Hennepin County Tuberculosis Association in preparing Christmas seal letters this year.

Mrs. Frederick H. K. Schaaf was in charge of the sale of articles made by Glen Lake Sanatorium patients.

### MOWER COUNTY

Mrs. H. B. Allen was hostess to the Auxiliary when work on their project of cancer dressings was done. Mrs. W. B. Grise of Austin is head of the Junior Red Cross.

### NICOLLET-LE SUEUR

Mrs. L. E. Sjastrum, president, has just finished teaching a class in home nursing in North Mankato. Everyone is busy on a drive for *Hygeia* subscriptions. The Auxiliary has one new member, Mrs. A. A. Geroux of North Mankato.

### RAMSEY COUNTY

Ramsey County members really get things accomplished at their meetings. Under the direction of Mrs. William Von der Weyer, they start their day at eleven o'clock, working on the project of making pads for Our Lady of Good Counsel Free Cancer Home and thumb bandages for St. John's Hospital. Lunch is served at 12:30 with a business meeting following at 2:00 o'clock. The members voted to continue their good work, as it serves a need in the community and helps the members to become better acquainted.

### RENVILLE COUNTY

New officers elected are Mrs. R. E. Billings, Franklin; Mrs. Wm. Johnson, Morgan; Mrs. R. Adorns, Bird Island. The Auxiliary will again sponsor the annual radio contest for Tuberculosis and the *Hygeia* contest.

## RICE COUNTY

Mrs. F. W. Stevenson of Faribault was hostess to her society in October. The following officers were elected: Mrs. F. W. Stevenson, Mrs. Norman Lende, and Mrs. A. M. Hanson, all of Faribault.

## ST. LOUIS COUNTY

"Are you growing old gracefully?" was Dr. E. L. Tuohy's subject when he talked to the Auxiliary at the October luncheon meeting. Several new members were guests that day. A collection of current books for the Nopeming Sanatorium was made for the "up" patients' room.

## STEARNS-BENTON

A pot-luck supper was held at the home of Mrs. Carl Luckemeyer in St. Cloud as the first meeting of the year. Mrs. Joseph B. Gaida, president, presided. The Auxiliary will conduct meetings in different homes each month, as a means of promoting better friendship.

## STATE BOARD

The first State Board meeting of 1945-1946 was held at the Minnesota Club, Saint Paul, on November 8. Mrs. E. V. Goltz presided. Dr. Wallace Ritchie, guest speaker at the luncheon, talked on the Twenty-sixth General Hospital of which he was a member, and told some delightful anecdotes of his experiences.

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## ♦ Of General Interest ♦

Dr. Emery C. Bayley and Dr. Bernard A. Flesche have opened joint offices for the practice of medicine in the Wenzel Building at Lake City.

\* \* \*

Dr. Albert I. Balmer, who recently returned to Pipestone from military service has re-established his practice in partnership with Dr. Charles A. Williams, with offices in the McKeown Building.

\* \* \*

Dr. R. B. Kirklin, Mayo Clinic, has been made an honorary member of the Radiological Society of the Republic of Columbia and also of the Cuban Radiological Society.

\* \* \*

Dr. Lewis A. Knutson, who was recently discharged from the Army Medical Corps, is now associated in practice with Drs. Gustave M. and John W. Helland at Spring Grove, Minnesota.

\* \* \*

Dr. Clarence Siegel, formerly a member of the staff of the Glen Lake Sanatorium, has opened offices for the practice of internal medicine at 514 Lowry Medical Arts Building, Saint Paul.

\* \* \*

Dr. A. R. Ellingson has completely recovered from his illness which required several weeks of recuperation at his cottage on Bad Medicine Lake, and has resumed his practice at Detroit Lakes.

\* \* \*

Dr. Alfred K. Stratte has resumed his practice in Pine City. Until he can make other arrangements he will occupy his former office in the postoffice building, with consultation hours every day except on Fridays.

\* \* \*

Dr. Joseph S. Emond has returned from military service and is again associated with his brother, Dr. Albert Emond, in the practice of medicine and surgery with offices in the Emond Hospital Building in Farmington.

\* \* \*

Major Delmar R. Gillespie has returned to civilian life in Saint Paul, after twenty-two months of service with the 247th General Hospital in New Guinea and the Philippines. Dr. Gillespie is making his home at 1528 Grantham Street.

\* \* \*

Dr. Hovard Helseth who, before going to Chicago for study at the Cook County Postgraduate School several months ago, and who was associated with the Thief River Falls Medical Clinic, has opened offices in the Woolworth Building at Fergus Falls for private practice.

\* \* \*

Dr. L. S. Jordan, of Granite Falls, was elected president of the Minnesota Public Health Association at the annual meeting held at the Athletic Club in Saint Paul, succeeding Dr. F. E. Harrington, of Minneapolis. Dr.

J. A. Myers, of Minneapolis, is chairman of the Association's educational committee.

\* \* \*

Announcement has been made of the appointment of Dr. O. W. Katz, of Aberdeen, South Dakota, as chief officer of the United States Veterans' Administration in Minneapolis.

Dr. and Mrs. Katz have taken an apartment in the Calhoun Beach Apartments.

\* \* \*

Announcement has been made of the association of Dr. T. L. Trelstad with Dr. Baxter A. Smith in medical practice at Crosby. Dr. Trelstad, who was recently discharged from military service after over four years in the Pacific Theatre, is a native of St. Peter, but was practicing in Southern California prior to his induction.

\* \* \*

Before restricting himself to regular office hours, Dr. H. A. Miller, who recently returned from Monroe, Georgia, to practice in Fairmont, spent some time in South Dakota where he did his part in reducing the pheasant population. While in Georgia, Dr. Miller was in charge of a hospital.

\* \* \*

Dr. Byrl R. Kirklin, Mayo Clinic, was guest speaker at the open meeting of the Rochester Academy of Medicine held in commemoration of the 50th anniversary of the discovery of the x-ray. During the same week, Dr. Kirklin, representing the Surgeon General of the U. S. Army, attended the commemorative banquet held in Chicago.

\* \* \*

Dr. Reuben C. Johnson, Minneapolis, was elected president of the Minnesota Society of Internal Medicine at their meeting for election of officers held in the Ramsey County Medical Society rooms in Saint Paul. Dr. Charles Watkins, of the Mayo Clinic, was made vice president, and Dr. Alex Brown, also of the Clinic, was re-elected secretary-treasurer.

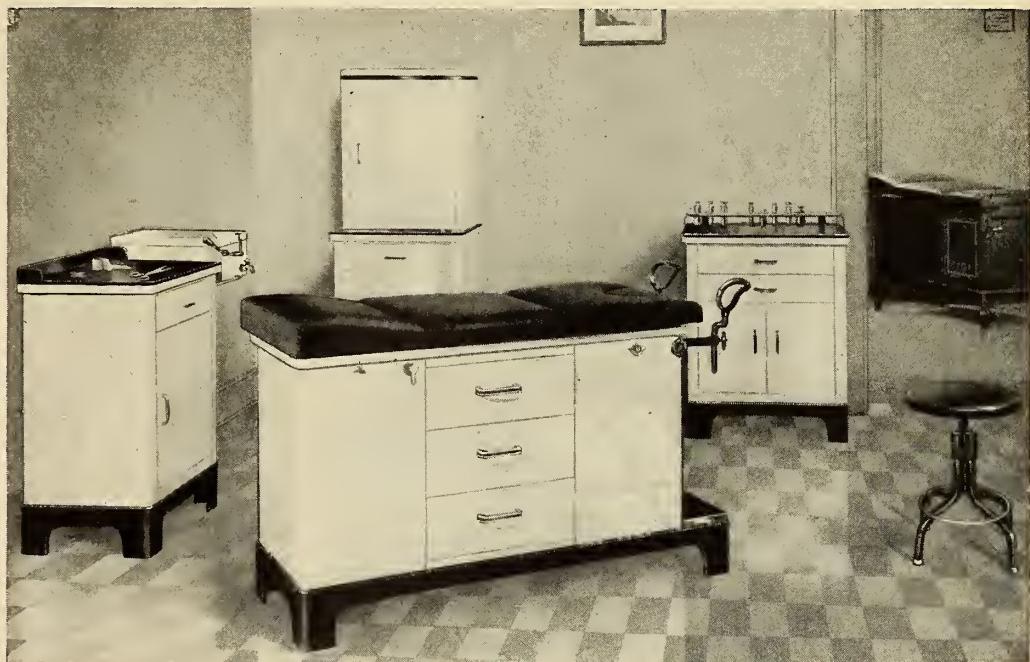
\* \* \*

Dr. Lyle V. Berghs, who has been doing "refresher work" at the Mayo Clinic since his discharge from the Armed Forces several weeks ago, has completed his courses and is again in practice in Owatonna after an absence of thirty-seven months. He is sharing offices with Dr. Donald H. Dewey, an association which began fifteen years ago.

\* \* \*

Commander Horatio B. Sweetser, Jr., who has been in military service since December, 1941, has returned to his practice in Minneapolis. Commander Sweetser was Chief of Medicine at Great Lakes until October, 1943, when he was assigned to the same duties on the Hospital Ship *Samaritan*, where he remained until his discharge in October of this year.

(Continued on Page 1036)



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## OF GENERAL INTEREST

(Continued from Page 1034)

After fifty-one months in the Army Medical Corps, Dr. Wallace E. Anderson has returned to Thief River Falls, where he is associated with Dr. Oscar F. Mellby, Mrs. Anderson's father.

During the past year Dr. Anderson was assistant chief of staff, with rank of Major, of a 750-bed hospital in the European theatre.

\* \* \*

In the absence of Dr. Werner J. Lund from his offices in Staples for a much-needed vacation and rest, his practice has been in charge of Dr. John H. O'Leary, who was recently discharged from the Army Medical Corps. Dr. O'Leary, a former associate of Dr. Lund, was on duty for many months in the Aleutians and later in Europe.

\* \* \*

Major Robert W. Schmidt, recently released from military service, has returned to his practice in Worthington. During thirty-nine months of duty Dr. Schmidt's assignments were mainly in the Pacific Theatre and the North Sector General Hospital. He served in the Hawaiian Islands, the Philippines, and in the Battle of Leyte.

\* \* \*

Dr. J. Richards Aurelius, Saint Paul, was a member of the Advisory committee for the nationwide educational program conducted during the week of November 5 to 10 in observation of the fiftieth anniversary of the discov-

ery of the x-ray. The program was designed to familiarize the general public with the development of the ray as a medical instrument and results obtained from its use.

\* \* \*

Dr. Stewart W. Shimonek has received his discharge from the Navy and has resumed the practice of orthopedics at 942 Lowry Medical Arts Building, Saint Paul. He attained the rank of Commander in the Navy and was assigned to the 4th Marine Division which saw action in the Marshalls, Saipan, Tinian, and Iwo Jima campaigns.

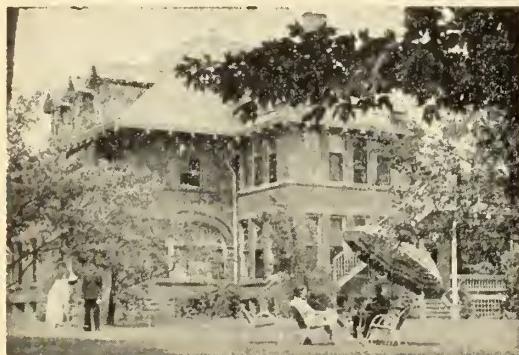
\* \* \*

Lt. Victor Sbrov, Minneapolis physician, now in the Army Medical Corps, has been assigned to DeWitt General Hospital in Auburn, California. Lt. Sbrov graduated from the University of Minnesota in 1944.

A brother, Captain A. M. Sbrov, also of Minneapolis, recently returned to this country after nine months' service in the Army Medical Corps in Germany.

\* \* \*

Dr. Edward L. Strem has opened an office at 711 Lowry Medical Arts Building, Saint Paul, for the practice of pediatrics. Dr. Strem interned at Ancker Hospital, Saint Paul, in 1938-39, was an instructor in anatomy and in pathology at the University of Minnesota Medical School in 1939-40, took a residency in pediatrics at the Minneapolis General Hospital in 1940-42, and was in the Medical Corps of the Army from July, 1942, until October, 1945.



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Improvements which have been under way at the More Clinic in Eveleth for some time and now completed, include a new emergency room, laboratory, and library, and enlargement of the physiotherapy and diathermy rooms. New walls, celotex ceilings, plastic tile floors and fluorescent lighting have been installed.

The staff includes Drs. F. R. Kotchevar, Willard Akins, and M. L. Strathern.

\* \* \*

Dr. Robert G. Hankerson is again in practice at Minnesota Lake, after an absence of three years in the armed forces. Dr. Hankerson enlisted in the Army Air Corps in August, 1942. He went overseas in September, 1943, and served as Flight Surgeon in the China-Burma-India theatre for fourteen months. He was awarded the Air Medal and his squadron the Presidential Citation.

\* \* \*

Results of the balloting by mail for officers of the Ramsey County Medical Society were announced at a meeting of the society held at Ancker Hospital on November 26. Dr. Harry B. Zimmermann was elected president, succeeding Dr. Justus Ohage. Dr. John M. Culligan is president-elect for 1947; Dr. J. Richard Aurelius is vice president, and Dr. Clayton K. Williams, secretary-treasurer.

\* \* \*

Dr. A. W. Shaw, confined in the Municipal Hospital in Virginia by an operation which involved amputation of the right leg, is reported at this time as progressing favorably.

A pioneer Mesabi Range physician and surgeon, Dr. Shaw was founder of the hospital at Buhl, where he served a lengthy term as director and chief surgeon. Since disposing of the hospital several years ago he had been in practice in Virginia, but recently retired.

\* \* \*

Dr. E. L. Tuohy, president of the Minnesota State Medical Association, was the guest speaker at the joint meeting of the Lyon-Lincoln and Blue Earth County Medical Societies held at the Hotel Thomas in Worthington.

Dr. B. J. Branton, of Willmar, chairman of the Committee on Organization of the Minnesota Medical Care Plan, discussed the plan and the progress that has been made in getting it into operation.

\* \* \*

Captain Peter S. Rudie, Duluth physician and surgeon, has been released from service in the Navy, where he has been on duty since the week following the attack on Pearl Harbor. At the time of his enlistment he was assigned to the U. S. Naval Hospital at Bremerton, Washington. From there he was transferred to the South Pacific where he served as Senior Medical Officer on the *USS Dixie*. For the past sixteen months he was Chief of Surgery in the U. S. Naval Hospital at Camp Lejeune, North Carolina.

\* \* \*

Dr. Paul Bjelland has opened offices in the Thomas Building at Nicollet Avenue and 58th Street, Richfield, for the practice of medicine and surgery. Dr. Bjelland, who has been serving as medical officer for a local naval defense plant for most of the duration, was formerly as-



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sociated with the Minnesota Public Health Department in Duluth. He is a graduate of the University of Minnesota Medical School, and following the completion of his internship at Asbury Hospital in Minneapolis he did postgraduate work in surgery in Chicago.

\* \* \*

Announcement of the election of Cleon Headley, Saint Paul attorney, as second vice president of the Minnesota Cancer Society has been made by Dr. William A. O'Brien, president. Mr. Headley will assist in the educational work which is conducted from the offices of the society in the Lowry Building in Saint Paul.

Edwin J. MacEwan, the new administrative director of the organization, assumed his duties on October 15. Mr. MacEwan was formerly executive vice president of the New Haven, Connecticut, Chamber of Commerce.

\* \* \*

Dr. Orville H. Jones, formerly of Madison Lake, has opened offices in the National Citizens Bank at Mankato. About the same time, with his wife and four children, he moved into a new home recently purchased. Following his graduation from the University of Minnesota in 1938, Dr. Jones located at Madison Lake and also assisted Dr. J. A. Cosgriff at Olivia and Dr. D. E. Affeldt at Kasson. He is now a member of the staffs of St. Joseph's Hospital and Immanuel Hospital in Mankato.

\* \* \*

With the nearest physician thirteen miles from Minnesota, residents of the community sent a petition with 1,244 signatures to the War Department asking for the

release of Dr. S. D. Wolstan from military service, so that he might return to his practice at Minneapolis. The petition stated that the neighboring doctors at Marshall were already greatly overworked and with winter approaching, when the roads may be impassable for days at a stretch, a state of emergency could be said to exist.

\* \* \*

Dr. Carl H. Winquist, recently released from the Army Medical Corps after four years of service, has resumed his practice in Crosby. Since his induction in February, 1941, Dr. Winquist has served at various bases in this country, and with the 7th Army in Europe from October, 1944 to June, 1945, where as Major he was in charge of a surgical team at the 132nd Evacuation Hospital. His unit supported the 7th Army from Marseille to Munich.

Dr. Benjamin A. Fine, who has been in charge of the practice during Dr. Winquist's absence, will remain as an associate in the office.

\* \* \*

Dr. Henry A. Korda, who was assistant to Dr. Edward K. Endress in Saint Paul before his induction into the armed forces, where he served for thirty-eight months, has announced his association with Dr. L. A. Veranth for the practice of medicine and surgery in St. Cloud.

Dr. Korda, a captain in the Army Medical Corps, had sixteen months of service with combat units and was later stationed at the 95th Evacuation Hospital. He was

awarded the ETO ribbon with six battle stars and the Purple Heart for wounds suffered at Anzio, and the Arrowhead Decoration for D-Day landings.

A graduate of the University of Minnesota Medical School, he served his internship at Miller Hospital in Saint Paul.

\* \* \*

Dr. Lloyd Gilman, who, at the time of his induction into military service was practicing in Atwater, has opened offices in Willmar, where he was born and attended high school.

A graduate of Macalester College and the University of Minnesota Medical School, Dr. Gilman was commissioned a reserve officer in 1937, and was called into service on May 6, 1937. He went overseas with the 6th Armored Group in January, 1944, and served in the European Theatre of Operations. His rank at retirement was Major.

\* \* \*

While on a three months' terminal leave, Captain David M. Potek returned to International Falls to make arrangements for re-opening his offices and to find living quarters for his family who have been living in Saint Paul while he has been in service.

Captain Potek enlisted in the Army Medical Corps in November, 1940. In fifty-eight months of duty he was with the 118th General Hospital in Australia, Camp Ellis, Illinois, and various separation centers. He is a graduate of the University of Minnesota Medical School, Class of 1933.

\* \* \*

Drs. Edwin G. Benjamin and Harold G. Benjamin, sons of Dr. Arthur E. Benjamin, have returned from military service and are now associated with their father in the practice of general surgery with offices at 1727 Medical Arts Building, Minneapolis. Dr. Edwin G. Benjamin, with the rank of Lieutenant Colonel, served as Commanding Officer of Midland Field Post Hospital in Texas, and as post surgeon at the army hospital at Gulfport, Mississippi. Dr. Harold G. Benjamin was chief surgeon of the 41st Field Hospital located at New Guinea, Biak, and on Luzon, and had the rank of Major.

\* \* \*

After an absence from his missionary post in Nanking since 1941, when he was forced to flee with his family, Dr. J. Horton Daniels, who has been recently associated with the student's health service at the University of Minnesota, will return to China as soon as the State Department clears his passport.

Dr. Horton Daniels left Minneapolis for China in 1919 as a representative of the Presbyterian Church, and he is a member of the staff at the University of Nanking.

Mrs. Daniels, neé Helen Dunn, of Minneapolis, will not accompany her husband, as the State Department refuses clearance for women until conditions in China are more settled.

\* \* \*

Dr. Richard B. Hullsieck has re-opened his office at 326 Lowry Medical Arts Building, Saint Paul, for the practice of urology. Dr. Hullsieck entered active service September 20, 1940, and for two and half years was Medical Director of the State Selective Service. He went overseas in November, 1943, as Chief Surgeon in

DECEMBER, 1945

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**GYNECOLOGY**—Two-week Intensive Course, starting February 25. One-week Personal Course in Vaginal Approach to Pelvic Surgery, starting February 18.

**OBSTETRICS**—Two-week Intensive Course, starting February 11.

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**MEDICINE**—Two-week Intensive Course, starting February 18.

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a Station Hospital and was later Executive Officer of an Army Convalescent Hospital of 3,000 beds with the 3rd and 9th Armies in France, Holland and Germany. Dr. Hullsick attained the rank of Lieutenant Colonel in the Medical Corps and will obtain his official discharge January 1, 1946.

\* \* \*

Dr. James L. Jaeck, who was recently discharged from the Navy, has opened offices at Heron Lake.

A 1936 graduate of the University of Minnesota Medical School, Dr. Jaeck had been in practice in Minneapolis for five years at the time of his enlistment. During this period he was examining physician at Lymanhurst Hospital, was a member of the staff of the Swedish Hospital, and held a clinical assistantship at the University Medical School.

Dr. Jaeck was in active combat duty for forty-two months, twenty of which were in overseas service. He was stationed in Iceland for ten months prior to his commission as Lieutenant Commander and Flight Surgeon on the Aircraft Carrier *USS Princeton*. While in the Navy, Dr. Jaeck took advantage of an opportunity for specialized training in diseases of the eye, ear, nose and throat.

\* \* \*

Alumni of the University of Minnesota will be interested in knowing that the University and the medical faculty have been especially commended by General Joseph T. McNarney, Commanding Officer, Headquarters Mediterranean Theater of Operations, United States Army, for the distinguished service performed by the 26th General Hospital.

Established near Constantine, this was the only general hospital of the Eastern Base Section. During the Tunisian Campaign it cared for large numbers of sick and wounded. "Later," the commendation states, "with the movement to Bari, Italy, the unit formed the nucleus of medical service to the Fifteenth Air Force and has been highly commended by that command.

"The high standard of professional service maintained by the hospital has reflected great credit on the medical officers and nurses as individuals; this credit may be properly shared by the University of Minnesota, their sponsor."

The commendation is coincident with the inactivation of the hospital.

\* \* \*

Captain Thomas B. Magath, the first member of the Mayo Clinic to enlist in military service, has returned to his duties as head of the department of bacteriology and parasitology at the Clinic. He had completed four years and nine months of active duty in the Navy Medical Corps. During this time he made twelve trips to the Caribbean, South America and Central America; three trips in the Pacific, extending from the Aleutians to Southern Australia. He covered Africa, Southern Europe, Turkey, the Levant, the Middle East, India, Burma and China, and he has the highest praise for the work of the doctors, dentists, nurses and corpsmen under "the superb leadership and untiring efforts of Vice Admiral Ross T. McIntire."

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icine and surgery during the war and possible subsequent work in civilian life done by men who may not have the equipment they had in service, Captain Magath said that he does not expect any great lag in achievement because of the close liaison which has been kept and which will continue to be kept between the Reserve Command, the Army and Navy, and the Public Health Service.

Captain Magath's daughter, Ensign Elizabeth Magath, is an occupational therapist at the U. S. Naval Hospital in Seattle, and a son-in-law, Captain James T. McClellan, a former fellow at the Mayo Foundation, is in the Army Medical Corps and stationed at Marseilles.

\* \* \*

The Hennepin County Medical Society has announced the return to practice from military service of the following Minneapolis physicians:

Dr. Charles A. Aling, a major in the Army Medical Corps, was inducted in November, 1942. He was sent overseas in February, 1944, and served as Chief of the Surgical Group for the 11th Evacuation Hospital in France, Luxembourg, Belgium, Holland, and Germany.

Dr. Samuel Balkin, plastic surgeon, was in service from September, 1941, and with rank of Major was plastic surgeon at Billings General Hospital at Fort Benjamin Harrison. He went overseas in April, 1943, where he was associated with the 94th Evacuation Hospital throughout the entire Italian Campaign.

Dr. Victor K. Funk, commander, entered service in April, 1942, and served as senior medical officer aboard the *USS Orion* in the Pacific for seventeen months. Dr. Funk has rejoined the staff at Glen Lake Sanatorium.

Dr. James A. Balke, general medical practice, has returned to his offices in Hopkins after an absence of three years in service. A captain, he was fifteen months at a replacement depot in the ETO.

Dr. Allan Challman, psychiatrist, before his entrance into the Army in June, 1941, was head of the Child Guidance Clinic of the Minneapolis public schools, but he is now in private practice. He was consultant in psychiatry for the South Pacific Command, headquarters in Australia for three years. His rank was Colonel and he holds the Legion of Merit Award.

Dr. Edward T. Evans, orthopedist, Lieutenant Colonel, had been in the Army since February, 1942. In Oc-

tober of the same year, he was made Chief of Orthopedics for Base Hospital 26 in North Africa and Italy. Later he filled the same position at Billings General Hospital, Fort Benjamin Harrison, Indiana.

Dr. Douglas P. Head, internal medicine, entered the Army in February, 1942, and with rank of Major served as internist at Base Hospital 26 in North Africa and Italy. He was awarded the Bronze Star for special research in peptic ulcers.

Dr. Emil Johnson, surgery, has been in service since August, 1942. He went overseas in April, 1944, with the 71st Evacuation Hospital in New Guinea and the Philippines. His rank was Captain.

## HOSPITAL NEWS

Announcement has been made of the sale of the Mahnomen Hospital to the Catholic Sisters of Crookston. The hospital was founded by Anna B. Munson, but it was later sold to Dr. John J. Ederer, who operated it until two years ago, when he was forced by ill health to close it. Since then Mahnomen doctors have been obliged to send their patients out of town when hospitalization was required.

\* \* \*

A heart disease medical research center at the University of Minnesota, which it is hoped will attract physicians, biochemists, physicists, and other scientists from all parts of the country, will be established in connection with the new heart hospital for which the solicitation of funds is now being conducted. The Variety Club of Minneapolis, an organization of theatrical men, has pledged itself to raise the required \$325,000 for the building and to contribute \$25,000 annually to its support.

The site of the new hospital is at the rear of the University Hospital and faces the Mississippi River. It will be connected to the main hospital by a tunnel and will use the same kitchen, heating and x-ray equipment.

\* \* \*

Opening of the new Public Health Center in Minneapolis on October 26 was celebrated with open house from four to six. The guests included Hennepin County community leaders and representatives of the medical and nursing professions and health and welfare agencies.

The Hennepin County Tuberculosis Association was

## OF GENERAL INTEREST

host, and Dr. Stephen H. Baxter, president of the association, and a member of the Board of Public Welfare for six years, was guest of honor.

\* \* \*

Dr. Marland R. Williams, of Cannon Falls, has been appointed on the committee which is in charge of raising funds for the establishment of a memorial hospital in that city.

### CLINICAL-PATHOLOGICAL CONFERENCE

(Continued from Page 1004)

#### Summary

Three cases of adrenal hemorrhage of the newborn in an experience of 9,500 births are described. One of these followed a typical clinical course with fever, rapid, jerky respirations, cyanosis, palpable mass in the right kidney area, negative x-ray studies of the lungs, and death within thirty-six hours after birth. The other two infants died very suddenly and unexpectedly during the first week of life. Vitamin K was used in the mother prophylactically in one of these cases.

The anatomical criterion for hemorrhage in the adrenal of the newborn is a minimum of a microscopic demonstration of a complete disruption of the regular irregularity of the degenerating columns of cortical cells and adjacent sinusoids by massed red blood cells.

A brief incomplete review of the literature concerning adrenal hemorrhage in the newborn is given.

#### References

1. American Academy of Pediatrics: Round-table discussion on hemorrhage of the newborn infant. *J. Pediat.*, 20:637-661, (May) 1942.
2. Arnold, D. P.: Massive suprarenal hemorrhage in newborn infant. *Am. J. Dis. Child.*, 40:1053-1057, (Nov.) 1930.
3. Clifford, S. H.: Hemorrhagic disease of the newborn. *J. Pediat.*, 14:333-340, (Mar.) 1939.
4. Firor, Warfield M.: Adrenal hemorrhage in children. *South. M. J.*, 30:306-309, (Mar.) 1937.
5. Goldzieher, Max A., and Gordon, Mary B.: The syndrome of adrenal hemorrhage in the newborn. *Endocrinology*, 16:165-180, (Mar.) 1942.
6. Goldzieher, M. A., and Greenwald, H. M.: Hemorrhage of suprarenals in newborn infant. *Am. J. Dis. Child.*, 36:324-332, (Aug.) 1928.
7. Hartman, Frank A.: Certain functions of the adrenal cortex. *New England J. Med.*, 209:480-486, (Sept. 7) 1933.

8. Henderson, J. S.: Hepatic hemorrhage in stillborn and newborn infants. *J. Obst. & Gynec. Brit. Emp.*, 3:377-388, (June) 1941.
9. Ikeda, Kano: Malignant meningococcic infection. *Minnesota Med.*, 28:373-378, (May) 1945.
10. Kelly, John F.: Hemorrhage of suprarenal glands following breech. *J. Indiana M. A.*, 24:135-136, (Mar. 15) 1931.
11. Levinson, S. A.: Suprarenal hemorrhages (traumatic) in the newborn. *Am. J. Surg.*, 29:94-96, (July) 1935.
12. Marine, D., and Vaumann, E. J.: Influence of glands of internal secretion of respiratory exchange. *Am. J. Physiol.*, 7:35, 1921; also 59:353, 1922.
13. Phillips, Sam: Hemorrhage and rupture of the adrenal in the newborn infant. *South. M. J.*, 31:759-761, (July) 1938.
14. Presentation of a case. Case records of Massachusetts General Hospital. *New England J. Med.*, 225:510-513, (Sept. 25) 1941.
15. Rosenblum, Jacob: Suprarenal hemorrhage in the newborn infant. *Am. J. Dis. Child.*, 43:663-666, (Mar.) 1932.
16. Schroder, C. H., and Wells, A. H.: Bilateral adrenal hemorrhages with Waterhouse-Friderichsen syndrome. *Minnesota Med.*, 27:486-487, (June) 1944.
17. Scott, W. J. M.: Influence of glands with internal secretion on respiratory exchange. *J. Exper. Med.*, 36:199, 1922.
18. Snedeker, L.: Hemorrhagic disease of the newborn. *J. Pediat.*, 19:1-15, (July) 1941.

### MINNEAPOLIS SURGICAL SOCIETY

(Continued from Page 1019)

hospital in an attempt to build him up. (X-ray films before and after resection demonstrated.)

The second patient in whom operation was completed was made, aged 48, operated on in March, 1945, for a squamous cell carcinoma of the lower third of the esophagus which had produced dysphagia for five months. This tumor and the cardiac end of the stomach including three involved lymph nodes along the upper part of the lesser curvature were resected by a similar technique and a direct esophagogastrectomy made after bringing the stomach up into the chest. Convalescence again was uneventful and the patient relieved of dysphagia. He has, however, not regained all his lost weight so I fear he may have other metastatic lesions. The first x-ray film showed the obstructing tumor and second the thoracic stomach with a wide-open anastomosis.

Both of these patients on postoperative barium studies of the stomach have shown no delay at the site of the anastomosis but rather a marked hyperperistalsis throughout the stomach with considerable delay in passage of the meal through the pylorus. As the operative procedure necessitates the section of both vagus nerves perhaps these findings may be explained on the basis of unopposed action of the sympathetics. Dragstedt in his recent report on bilateral vagus section for ulcer does not record this as a result of the neurectomy.

The patients reported this evening represent only a beginning in the treatment of this otherwise fatal condition. None can be considered as a really early case of esophageal carcinoma. If good and permanent results are to be obtained they must result from surgical excision but even this will not avail unless the diagnosis can be made early and treatment instituted without delay. In closing, may I recommend that the abdominal surgeons give some thought to the transthoracic, transdiaphragmatic approach for some of their patients with high gastric carcinoma.

ERNEST R. ANDERSON, M.D.

Recorder

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## BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

**FIRST-AID TEXTBOOK**—American Red Cross. Revised. Prepared for the instruction of first-aid classes. 254 pages. Illus. Price, 60c, paper cover; \$1.00, cloth. Philadelphia: The Blakiston Company, 1945.

**THE PHYSICIAN'S BUSINESS.** Practical and Economic Aspects of Medicine. Second Edition. George D. Wolf, M.D. Assistant Clinical Professor of Otolaryngology, New York Medical College, New York Fellow, New York Academy of Medicine Fellow, et cetera. 433 pages. Illus. Price, \$6.00, cloth. Philadelphia: J. B. Lippincott Co., 1945.

**EVERYDAY PSYCHIATRY.** John D. Campbell, M.D. Commander MC, USNR. Chief Neuropsychiatrist U.S. Naval Base Hospital No. 8; formerly Chief Neuropsychiatrist U. S. Naval Hospital, Charleston, S. C., and Visiting Lecturer in Psychiatry, Medical College of South Carolina; Diplomate, American Board of Neurology and Psychiatry. 333 pages. Price, \$6.00, cloth. Philadelphia: J. B. Lippincott Co., 1945.

**MEN UNDER STRESS.** Lt. Col. Ray R. Grinker, MC, and Major John P. Spiegel, MC, Army Air Forces. Pp. 484; no illustrations. Price \$5.00. Philadelphia: Blakiston, 1945.

From the experience of war comes this analysis of the reactions of a selected group of healthy, young, adult males when placed under stress of combat. No similar opportunity for such a study has ever existed, and it is fortunate that men of the stature of Dr. Grinker and Dr. Spiegel were on hand to record the observations. The material of the study included the flying personnel—pilots, navigators, bombardiers, and gunners; the stress was combat flying or preparation for it; the emotional reaction of the individual was fear or anxiety. This book is a study of the manner in which each personality handled these emotions. The war is over, but the man who suffers from "operational fatigue" may show the results of this stress for months and years to come.

This book is written less for the psychiatrist than for the general practitioner or specialist in other fields. Remarkably free from the jargon of psychiatry, the text carefully, though not obviously, defines an unfamiliar word or phrase. Just to learn the distinction between "fear" and "anxiety" is sufficient compensation for the

reading. Besides this, the book contains a readable analysis of the psychodynamics and offers usable therapeutic suggestions. The chapter correlating and transferring the findings of these anxiety neuroses of war with the needs of the civilian physician is especially useful.

"Men Under Stress" is simply written in delightful style, with complete bibliography and index. The type is large, the pages are of convenient size, and the paper is substantial but not glossy—all contributing to the pleasure of reading.

RODNEY F. KENDALL, M.D.

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**NEW AND NONOFFICIAL REMEDIES**, 1945, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1945. Cloth. Price, postpaid, \$1.50. Pp. 760. Chicago: American Medical Association, 1945.

Each year a revised list of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association as of January first is published in book form under the title of "New and Nonofficial Remedies." The book contains the descriptions of acceptable proprietary substances and their preparations, proprietary mixtures if they have originality or other important qualities, important nonproprietary nonofficial articles, simple pharmaceutical preparations, and other articles which require retention in the book.

Some fifteen or twenty newly accepted preparations appear in the 1945 volume. A large number of preparations have been omitted, mainly brands of official preparations. The general statement concerning these pharmacopoeial preparations has been retained for the information of physicians.

As stated in the preface, the entire book has been scanned to bring it up to date with the latest medical knowledge. It is noted that the section "Articles and Brands Accepted by the Council But Not Described in N.N.R.," a vestigial remnant of which appeared in the 1944 volume, has now entirely disappeared.

This section appeared to have been a catch-all for brands of official articles the acceptance of which the manufacturers desired for reasons of prestige, and miscellaneous preparations which were not necessarily or importantly within the Council's scope and which did not require detailed description. Many of the official preparations have been transferred to the body of the book and the others deleted. One is struck by the large amount of medical information contained in this volume. Certainly no other compendium of comparable price contains so much.

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